

Conceivability and Possibility

Conceivability as an Epistemic Guide to Possibility

Inauguraldissertation

Zur Erlangung der Doktorwürde

der Philosophischen Fakultät

der **Ruprecht-Karls-Universität Heidelberg**

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Datum: 17. 07. 2017

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Chapter 1: Introduction

1. The Epistemology of Modality

A modal statement asserts what could have been the case or what must have been the case, that is, what is possible or what is necessary.¹ In our everyday life, we often encounter modal claims and judgments. Here are some common examples:

- It is *possible* that Donald Trump is the 45th President of the United States.
- Although Lily wore a green dress this morning, she *could have worn* a yellow one.
- It is *possible* that there are dangerous animals around us, although we cannot see anything.
- It is *necessary* that there is a valley between two mountains.
- It is *necessary* that Goldbach Conjecture (GC) is true. (Let us assume that it is true.)
- It is *necessary* that water is H₂O.

All of these modal statements are true. Moreover, we know that they are true. If that is the case, then a natural question arises:

How do we know that a given modal claim is true, or how are we justified in believing that it is true?

To answer this question, we need an epistemology of modality (which is also known as modal epistemology). Compared with a general epistemology, whose central task is to answer how an agent acquires knowledge or justifies her beliefs, the scope of an epistemology of modality is narrower. An epistemology of modality answers the question how an agent gets to know or is justified in believing what is necessary and what is possible. In this dissertation, I will confine my discussion to the epistemology of claims concerning possibilities.

One way to acquire modal knowledge is to make inferences from what is actual. It is a generally accepted assumption that what is true entails what is possibly true.

¹ Throughout the dissertation, the term “possibility” without further qualification refers to metaphysical possibility, which should be distinguished from epistemic possibility and logical possibility. I will elaborate on epistemic possibility and logical possibility in Chapter 2.

Using the terminology of possible worlds, we can say that our knowledge of the actual world is a reliable guide to that of any possible world. However, by resorting to what is true in the actual world, we can only know the *realized possibilities*. A modal statement $\Diamond s$ describes a realized possibility iff s is true. For example, the statement “Donald Trump is the 45th President of the United States” is true. Hence, the possibility that Donald Trump is the 45th President of the United States is a realized possibility. Since we know that the statement “Donald Trump is the 45th President of the United States” is true, we can validly deduce that it is possibly true.

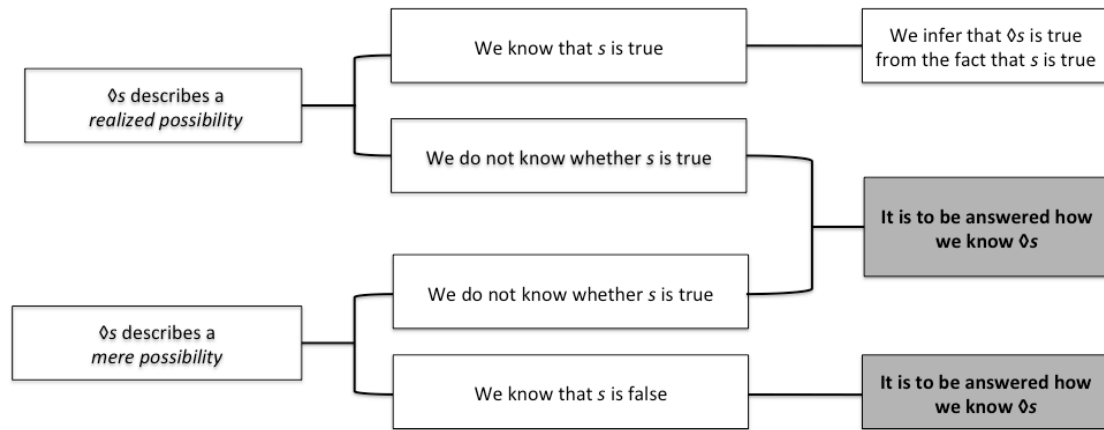
It is worth noting that not all of our knowledge of realized possibilities comes from our knowledge of actuality. If we lack the knowledge of the truth-value of s (even if s is actually true), then we cannot infer that s is possibly true. For example, without the knowledge that it is raining today, we cannot infer that it is possible that it is raining today, even if it is indeed raining. In short, our knowledge of realized possibilities comes from different sources. Some of it comes from our knowledge of actuality; some does not. Due to this difference, I separate realized possibilities into two exclusive groups. For any modal statement $\Diamond s$ in the first group, we know that s is true. For any $\Diamond s$ in the second group, we do not know the truth-value of s .

Except for realized possibilities, there are *mere possibilities* — the possibilities that are not realized. For example, the statement “Lily could have worn a yellow dress” describes a mere possibility.² A modal statement $\Diamond s$ describes a mere possibility iff s is false. Our knowledge of mere possibilities cannot come from our knowledge of the actual world. In the same way in which I classify realized possibilities, I separate mere possibilities into two exclusive groups. For any $\Diamond s$ in the first group, we know that s is false. For any $\Diamond s$ in the second group, we do not know the truth-value of s .

For the sake of discussion, here I draw a graphic to show how I separate possibilities into different groups. See Fig. 1.

Figure 1

² The two names in italics, namely, *realized possibilities* and *mere possibilities* are indebted to Vaidya (2017). See Vaidya, Anand, “The Epistemology of Modality”, The Stanford Encyclopedia of Philosophy (Summer 2017 Edition), Edward N. Zalta (ed.), forthcoming URL = <https://plato.stanford.edu/archives/sum2017/entries/modality-epistemology/>.



The two grey boxes show that the two groups of possibilities require a modal epistemology:

Group 1: $\Diamond s$ is a modal statement such that we do not know the truth-value of s .

Group 2: $\Diamond s$ is a modal statement such that we know that s is false.

Why is an epistemology of modality for statements of these two groups of philosophical interest? Let us consider Group 1 first. One reason is that in some cases (especially in some philosophical discussions), the purpose to acquire what is true in a possible world is to discover what is true in the actual world. For one thing, it is easier to establish arguments that begin with claims about possibilities than to establish arguments that begin with claims about actuality; for another, in these cases, we believe that it is valid to infer what is true from what is possibly true.³ Indeed, the truths of some $\Diamond s$ in Group 1 are reliable indicators of the truths of s .⁴ Thus, for these statements, we are in a position to know that s is true if we know that $\Diamond s$ is true. This explains why an epistemology of how we know the modal statements in Group 1 is of philosophical interest.

Then we consider Group 2. For some statements $\Diamond s$ in Group 2, it is to be determined whether s is necessarily false. So if we can establish an epistemology by means of which we can know that $\Diamond s$ is true, we are in a position to determine whether s is necessarily false.

³ Van Inwagen holds a similar view. He writes: "I would suppose that we find arguments that proceed from assertions of possibility more interesting than arguments that proceed from assertions of necessity for two reasons. First, we are inclined (at least initially) to regard assertions of possibility as easier to establish than assertions of necessity. Secondly, we are inclined (at least initially) to find it surprising that anything about how things are or must be can be deduced from a premise about how things might be; but it is hardly surprising that conclusions about how things are or must be can be deduced from premises about how things must be." See van Inwagen (1998), p. 67. In my view, the validity of the inference from possibility to actuality also matters.

⁴ I will elaborate on this in the following chapters.

Below I provide some examples for the modal statements in Group 1 and Group 2. I list four modal arguments, each of which has a modal claim as a crucial premise. The truth-values of these crucial premises are to be determined.

Argument 1

- It is possible that pain \neq C-fiber firing.
- If it is possible that pain \neq C-fiber firing, then pain \neq C-fiber firing.

Conclusion: Pain \neq C-fiber firing.

Argument 2

- It is possible that it is necessary that an omniscient, omnipotent, and morally perfect being exists.
- If it is possible that it is necessary that an omniscient, omnipotent, and morally perfect being exists, then it is necessary that an omniscient, omnipotent, and morally perfect being exists.

Conclusion: It is necessary that an omniscient, omnipotent, and morally perfect being exists.

Argument 3

- It is possible that conceivability does not entail possibility.
- If it is possible that conceivability does not entail possibility, then conceivability does not entail possibility.

Conclusion: Conceivability does not entail possibility.

Argument 4

- It is possible that zombies exist.⁵
- If it is possible that zombies exist, then physicalism is false.

Conclusion: Physicalism is false.

We do not know whether pain \neq C-fiber firing, or whether it is necessary that an omniscient, omnipotent, and morally perfect being exists, or whether conceivability does not entail possibility, so the modal premises of Arguments (1)-(3) are members of Group 1. The crucial premise of Argument (4) is a member of Group 2, because we

⁵ A zombie world is the microphysical duplicate of the actual world but lacks of phenomenal consciousness. The actual world is not a zombie world, so it is false that zombies actually exist. But it is to be determined whether or not it is possible that zombies exist.

know that the actual world is not a zombie world but we do not know whether or not zombies do not exist in all possible worlds. So if there is an epistemology of modality by which we can know that it is possible that zombies exist, then we can know whether it is necessary that zombies do not exist.

For some philosophers who endorse these modal arguments, conceivability is a reliable guide to possibility. In this dissertation, I aim to evaluate whether conceivability is helpful to expand our modal knowledge. In particular, I discuss whether we can expand our knowledge to include some philosophically interesting modal statements, such as the crucial premises of the arguments listed above.

2. Conceivability as a Guide to Possibility

Conceivability has generally been assumed to be an epistemic guide to possibility. There are two kinds of accounts of the relationship between conceivability and possibility: the evidential account and the entailment account. Proponents of the evidential account hold the view that conceivability only provides evidence of possibility.⁶ Proponents of the entailment account hold the view that conceivability entails possibility, a view that I call CEP in the following and that is my central concern in this dissertation:

(CEP) Conceivability entails possibility.⁷

Many details of this view, however, require investigation. What does it mean to say that something is conceivable? Is conceivability a property of statements, propositions or states of affairs? How can we determine whether what a proposition says is conceivable? The answers to these questions relate to each other and jointly determine whether conceivability is a reliable guide to possibility and whether CEP can play a role in acquiring modal knowledge.

Interpretations of the concept “conceivability” abound. Yet, under some interpretations, CEP is confronted with obvious counterexamples. So the proponents of CEP have to find an appropriate definition of conceivability, so that CEP formulated on the basis of this definition is immune to counterexamples. Below are some definitions of conceivability that are commonly found in philosophical literature

⁶ For a more detailed discussion of this view, see Yablo (1993).

⁷ For a more detailed discussion of this view, see Chalmers (2002). It is not hard to see that the entailment account entails the evidential account. In most parts of my dissertation, I focus my attention on the discussion of the entailment account. However, in Chapter 7, I also discuss the evidential account.

(Let A stand for any agent and s for any statement.):

- i. s is conceivable for A iff A believes that s is true.
- ii. s is conceivable for A iff A sees that s is possible.
- iii. s is conceivable for A iff A can imagine a world that A takes to verify s .
- iv. s is conceivable for A iff A cannot a priori rule out s .⁸

Each of these definitions of conceivability has its advocates. But each one also has its problem. Consider (ii) for example, which is proposed by van Cleve. Van Cleve imports the notion of possibility directly in the definition of conceivability. One problem with defining conceivability in this way is obvious: We risk that the link between conceivability and possibility is trivialized.⁹

Moreover, (i)-(iv) have a problem in common: The notion of conceivability is rendered agent-relative. Whether what a sentence describes is conceivable for an agent depends on her background knowledge or beliefs, or which concepts she grasps. In this case, something may be conceivable for one agent, but not so for another who lacks necessary background information. But the notion of possibility is agent-independent: What is possible does not depend on what an agent knows or believes, or which concepts she grasps. If conceivability is agent-relative but possibility is not, then the “standard objection” to CEP applies: Conceivability, which highly depends on one’s epistemic status, cannot be considered a guide to possibility, which is independent of one’s epistemic status.¹⁰

Here is an example. Many people believe that the Goldbach Conjecture (GC) is a false thesis (in terms of the definitions (ii)-(iv), we can also say that many people see that GC is possibly false, or can imagine a world that they take to verify \neg GC, or cannot a priori rule out \neg GC). Yet GC, as a true mathematical proposition (let us assume that it is true), is necessarily true. In other words, it cannot be the case that GC is possibly false. To avoid cases like this, conceivability should not be defined in terms of any agent-relative notion. Otherwise, it cannot be considered a reliable guide to possibility.¹¹

⁸ For a more extensive discussion of these definitions, see van Cleve (1983), pp. 35-45; Yablo (1993), p. 29; Chalmers (2002), p. 148. For more possible attempts to define conceivability, see Yablo (1993), p. 26; Gendler & Hawthorne (2002), p. 7.

⁹ The danger of circularity is pointed out by Chalmers. See Chalmers (2002), pp. 150-151.

¹⁰ The “standard objection” is due to Brueckner (2001).

¹¹ In this dissertation, I regard statements like “if it is conceivable that p , then it is possible that p ” or “conceivability is a reliable guide to possibility” as synonymous expressions with “conceivability entails

Another kind of possible counterexamples comes from Kripkean a posteriori necessities. Conceivability, whether or not understood as agent-relative, is tied to apriority and other rational notions. Thus, we can always in some sense conceive that some a posteriori truths of the actual world are false in another world. For example, we are able to conceive of a situation in which water is not H₂O. If conceivability entails possibility, we have to accept that it is possible that water is not H₂O. However, as Kripke points out, that water is H₂O is not only a fact in the actual world, but also a fact in all the other worlds, although the necessary identity of water and H₂O can only be known in an a posteriori way.

To accommodate the two problems mentioned above, Chalmers distinguishes different kinds of conceivability and demonstrates which kinds entail possibility by explaining away the counterexamples. According to Chalmers, only two of them, namely ideal negative conceivability (INC) and ideal positive conceivability (IPC), are reliable guides to possibility. By incorporating INC and IPC, he provides two refined versions of CEP:

(CP–) Ideal negative conceivability entails possibility.

(CP+) Ideal positive conceivability entails possibility.¹²

In other words, Chalmers establishes CP– and CP+ on the grounds that they are immune to the two types of counterexamples mentioned above. Furthermore, Chalmers and some other philosophers who endorse CP– and CP+ regard these two theses as a plausible epistemology of modality.

There are at least two important questions one can raise about Chalmers' theory. One question relates to the metaphysical claim about the relation between (ideal) conceivability and possibility. The other relates to the adequacy of CP as an epistemology of modality. Regarding the first question, one might wonder whether ideal conceivability actually entails possibility.¹³ In this dissertation, I put this issue aside. I assume that the entailment between ideal conceivability and possibility holds and focus my discussion on the second question.

If X entails Y, it seems natural to take X as an epistemic guide to Y. But whether

possibility”.

¹² In this dissertation, “CP” or “the CP thesis” will be used to refer to either CP– or CP+.

¹³ Works on this issue abound. For considerations from the philosophy of language, especially concerning two-dimensionalism, see Soames (2005); (2007). For discussions regarding strong necessities (the existence of strong necessities entail that CP fails), see Loar (1990); Hill & McLaughlin (1999); Goff & Papineau (2014); Levine (2014). For considerations from logic, see Vaidya (2008).

the X-to-Y entailment is qualified as an epistemology of Y requires further investigation. As an epistemology, the entailment from X to Y has to be not only true, but also of practical use. Here is an example of a conceivability-possibility entailment that is true but has no practical use. One may define conceivability in this way:

For any sentence s , what s says is conceivable iff s is possible.

A conceivability-to-possibility entailment formulated with reference to this definition of conceivability is surely true, because it is a tautology. But the practical significance of this entailment is negligible. In view of this, this conceivability-to-possibility entailment is not to be considered an epistemology of modality. In my dissertation, I probe into the practical significance of CP– and CP+. In particular, I consider whether we can expand our modal knowledge by means of the CP thesis to include some philosophically interesting modal statements, such as the modal premises of the aforementioned modal arguments.

3. Plan of Dissertation

In Chapter 2, I present how Chalmers establishes the link between ideal conceivability and possibility, which hinges on his theory of modal monism and *two-dimensional (2-D) semantics*. To avoid the “standard objection”, Chalmers introduces the notion of ideal rational reflection and defines ideal conceivability in terms of this notion. According to him, it is ideal conceivability, which is in fact logical possibility, that is a reliable guide to possibility. Since the notion of ideal conceivability (i.e., logical possibility) is agent-independent, the CP thesis therefore can resist the “standard objection”.

To eliminate the counterexamples from Kripkean a posteriori necessities, Chalmers introduces his theory of 2-D semantics. 2-D semantics assigns to any statement two intensions. That is to say, within the framework of 2-D semantics, a statement expresses two propositions, namely a primary and a secondary intension. According to 2-D semantics, any a posteriori necessary statement is associated with an a posteriori contingent proposition as its primary intension, and an a priori necessary proposition as its secondary intension. As a result, within the framework of 2-D semantics, Kripkean a posteriori necessities arise only at the level of statements but not at the level of propositions. Therefore, the thesis that ideal conceivability (i.e.,

logical possibility) entails possibility (i.e., metaphysical possibility), which is established at the level of propositions, remains intact.

At the end of Chapter 2, I argue that a consequence of Chalmers' theory of conceivability is that all necessary propositions (i.e., propositions that are either necessarily true or necessarily false) come to be a priori true or a priori false. That is to say, if p is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false, then the truth-value of p is a priori knowable.

In Chapter 3, I discuss a series of criticism of the CP thesis. They pertain to the issue of whether CP is qualified as an epistemology of modality. The extreme version of criticism holds that for any proposition p , we cannot know or have evidence for whether it is ideally conceivable that p . As to ideal positive conceivability, Hanrahan argues that to know or have evidence for whether it is ideally positively conceivable that p requires that we construct a maximal consistent set that entails p , which is too demanding a requirement to be met. Bailey (2007) argues that any argument for the claim that it is ideally positively conceivable that p_n requires an independent argument for the claim that it is ideally positively conceivable that p_{n+1} , where p_{n+1} entails p_n . Thus, we will face a regress when we try to determine whether it is ideally positively conceivable that p_n . Since the regress is infinite, for any p_n , we cannot know or have evidence for whether it is ideally positively conceivable that p_n . Hanrahan is also skeptical about the adequacy of our judgment of what is ideally negatively conceivable. She argues that to know or have evidence for whether it is ideally negatively conceivable that p requires that we examine every logical consequence of p . Since the number of logical consequences of any proposition is infinite, according to Hanrahan, we can never know or have evidence for whether a given proposition is ideally negatively conceivable. Worley (2003) expresses a moderate version of the skeptical view. She argues that for some proposition p , we cannot know or have evidence for whether it is ideally conceivable that p .

In this chapter, I respond to the arguments for the extreme version of criticism in turn. I endorse the moderate version. I accept that there are some propositions whose ideal conceivability cannot be known or justified. Moreover, I go one step further by specifying the ideal conceivability of what kind of propositions cannot be known or justified. I argue that in the following cases, we cannot know or have evidence for whether a given proposition is ideally conceivable:

-
- (1) If the truth-value of p is a priori knowable, then we cannot know or have evidence for whether it is ideally conceivable that p without knowing or having evidence of its truth-value.
 - (2) If p is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false, then we cannot know or have evidence for whether it is ideally conceivable that p without knowing or having evidence of p 's truth-value.
 - (3) If p is a proposition such that we know that p is false but do not know or have evidence for whether the truth-value of p is a posteriori knowable, then we cannot know or have evidence for whether it is ideally conceivable that p .

These conclusions will be used in the discussion of the following chapters.

In Chapter 4, I discuss a series of *reductio* arguments against the CP thesis. Howell and Mizrahi & Morrow provide three *reductio* arguments, each of which begins with a conceivability premise, stating that the falsity of CP (or the necessary falsity of CP) is conceivable. By the same CP thesis, they conclude that it is possible that CP fails (or necessarily fails). Then Howell and Mizrahi & Morrow draw the conclusion that CP fails from the fact that it is possible that CP fails (or necessarily fails). However, none of the conceivability premises of these arguments is fully justified. Howell, for example, does not provide a reason for his conceivability premise at all. To show that it is ideally conceivable that CP necessarily fails, Mizrahi & Morrow appeal to the existence of a Spinozistic deity. However, it is to be determined whether the notion of a Spinozistic deity is coherent (i.e., logically possible).

I argue that, in order to justify the soundness of these *reductio* arguments against CP, we have to show that the following propositions are ideally conceivable (i.e., logically possible):

- (a) CP (CP+ or CP–) fails.
- (b) A Spinozistic deity exists.
- (c) It is necessary that CP– fails.

I propose two possible ways in which the ideal conceivability (i.e., logical possibility)

of (a)-(c) can be vindicated. However, I argue that a move in either direction would render the *reductio* arguments redundant.

At the end of Chapter 4, I provide a reason why it is hopeless to refute CP by appealing to the *reductio* arguments: Each one of (a)-(c) is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false. According to the conclusion in Chapter 3, we cannot know or have evidence for whether (a)-(c) are ideally conceivable without knowing or having evidence of their truth-values. This is why we cannot provide a reason for the soundness of these *reductio* arguments.

In Chapter 5, I outline the main ideas of several versions of physicalism and dualism and their modal commitments, including:

- (i) substance physicalism/dualism;
- (ii) type physicalism/dualism;
- (iii) minimal physicalism/dualism.¹⁴

Moreover, I discuss the conceivability arguments for or against each version of physicalism or dualism, including:

- (1) Descartes' arguments for substance dualism;
- (2) Kripke's modal argument against type physicalism;
- (3) Chalmers' zombie argument against minimal physicalism;
- (4) the meta-modal argument for minimal physicalism.

The soundness of Arguments (1), (2) and (4) depends on the ideal conceivability of each of the following propositions, respectively:

- (a) My mind \neq my body (or my mind is not material).
- (b) Pain \neq C-fiber firing.
- (c) $\Box (PT \rightarrow Q)$.¹⁵

However, by assuming that the negation of each one of (a)-(c) is ideally conceivable, we can establish an "inverted" conceivability counterpart of each argument of (1), (2) and (4), which has the contrary conclusion. I argue that, between a conceivability

¹⁴ The so-called "minimal physicalism" is supervenience physicalism, according to which the distribution of all phenomenal properties of the actual world supervenes on the distribution of all microphysical properties of the actual world.

¹⁵ P, T and Q stand for a conjunction of all the microphysical truths of the actual world, a "that is all" statement, and an arbitrary phenomenal truth of the actual world, respectively.

argument and its “inverted” counterpart, only one is sound. However, I argue further that, if we can tell the sound one from the unsound one, another independent argument is required, by which we can know the truth-value of (a)-(c) and which therefore renders the original conceivability argument redundant. Thus, there is a dilemma: If we can provide such an independent argument, then a conceivability argument is not needed; if we cannot provide such an independent argument, whether or not Arguments (1), (2) and (4) are sound is to be determined. The discussion of Chapter 3 has indicated this dilemma. Each one of (a)-(c) is a proposition such that if it is possibly true, then it is true, and if it is possibly false, then it is false. So without knowing or having evidence of its truth-value, we cannot know or have evidence for whether it is ideally conceivable. But if we know or have evidence of its truth-value, then a conceivability argument is not required.

As to Argument 3, i.e., the zombie argument, I argue that we cannot determine whether it is sound, either. The soundness of the zombie argument hinges on its first premise, which says that it is ideally conceivable that $PT \wedge \neg Q$. Since $PT \wedge \neg Q$ is false (because Q is true), according to the definition of ideal negative conceivability, it is ideally conceivable that $PT \wedge \neg Q$ iff the truth-value of $PT \wedge \neg Q$ is a posteriori knowable. However, Chalmers does not provide a sufficient reason for the claim that the truth-value of $PT \wedge \neg Q$ is a posteriori knowable. As has been argued in Chapter 3, if p is a proposition such that we know that p is false, but we do not know or have evidence for whether the truth-value of p is a posteriori knowable, then we cannot know or have evidence for whether it is ideally conceivable that p . So we cannot know or have evidence for whether it is ideally conceivable that $PT \wedge \neg Q$ and therefore cannot know or have evidence for whether the zombie argument is sound.

In Chapter 6, I discuss the problem with meta-modal conceivability arguments. By establishing a conceivability argument, we can infer that p is possibly true from the fact that it is ideally conceivable that p . If p is itself a modal claim that can be written as $\Box q$, then we can construct a so-called “meta-modal” conceivability argument, which has the following structure:

It is ideally conceivable that $\Box q$.

Ideal conceivability entails possibility. (CP– or CP+)

If it is possible that $\Box q$, then $\Box q$ is true. (S5: $\Diamond \Box q \rightarrow \Box q$)

Conclusion: $\Box q$ is true.

However, for any meta-modal conceivability argument, by replacing $\Box q$ with $\neg\Box q$ in the first premise, we can always construct an “inverted” argument, which has the conclusion that $\neg\Box q$ is true. In other words, by constructing a pair of “inverted” meta-modal conceivability arguments, we can infer that both $\Box q$ and $\neg\Box q$ are true, which is unacceptable.

Both opponents and proponents of the CP thesis have provided their diagnosis of this problem. The opponents of CP, such as Yablo, argue that the CP thesis is not true. However, from the fact that CP leads to a pair of contrary conclusions, we can only conclude that CP is not consistent with the presumption that both $\Box q$ and $\neg\Box q$ are ideally conceivable. Without providing a sufficient reason for the claim that both $\Box q$ and $\neg\Box q$ are indeed ideally conceivable, we cannot conclude that CP fails. However, it is far from clear that Yablo provides such a reason, so his argument is not as convincing as he thinks.

In order to avoid Yablo’s objection, Chalmers proposes to exclude all modal claims from the scope of CP for the reason that it is too difficult to conceive of what a modal proposition $\Box q$ says. However, for one thing, difficulty is irrelevant to the issue of whether $\Box q$ is ideally conceivable. Thus, it is not necessary to exclude all modal claims from the scope of CP. For another, even in the non-modal realm, we can nevertheless construct a pair of parallel conceivability arguments that have contrary conclusions. For example, by assuming that pain = C-fiber firing is ideally conceivable and that pain \neq C-fiber firing is ideally conceivable, we can conclude that pain both is and is not C-fiber firing. Hence, excluding all modal claims is not sufficient to avoid the problem if there is one.

At the end of Chapter 6, I point out the problem that Yablo and Chalmers fail to see. Between a meta-modal conceivability argument and its “inverted” counterpart, only one is sound. When we try to tell the sound one from the sound one, we fill face a dilemma: Any $\Box q$ is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false. According to the discussion of Chapter 3, without knowing or having the evidence of the truth-value of $\Box q$, we cannot know or have evidence as to which one is sound. On the other hand, if we know or have evidence for whether $\Box q$ is true, a meta-modal conceivability argument is not needed.

In Chapter 7, I defend van Inwagen's moderate modal skepticism within the framework of Yablo's theory of conceivability and argue that his modal skepticism cannot be eliminated even within the framework of Chalmers' theory of conceivability, which is a more refined theory than Yablo's. Van Inwagen distinguishes between ordinary modal claims and extraordinary modal claims. Moreover, he suggests that to conceive of a scenario in which p holds requires that this scenario be incompatible with $\neg p$. According to van Inwagen, if $\Diamond p$ is an extraordinary modal claim, then we cannot conceive of a scenario that is incompatible with $\neg p$. So he concludes that if $\Diamond p$ is an extraordinary modal claim, it cannot be justified via Yablo-style conceivability.

However, for some $\Diamond p$, even if $\Diamond p$ is an ordinary modal claim, we cannot conceive of a scenario that is incompatible with $\neg p$. That is to say, if we insisted on van Inwagen's high standard of conceivability, some ordinary modal claims could not be justified via Yablo-style conceivability, either. However, this conclusion is not consistent with van Inwagen's own view. In order to avoid this problem, Hawke suggests that van Inwagen's high standard of conceivability be applicable to extraordinary but not to ordinary modal claims. I think that this proposal is reasonable. But one question poses itself: What kind of claims are extraordinary claims? I propose that $\Diamond p$ is an extraordinary modal claim iff p is a claim such that if it is possibly true, then it is true; and if it is possibly false, then it is false. Furthermore, I argue that our beliefs of extraordinary claims cannot be justified via Chalmers-style conceivability, either.

Chapter 8 is the conclusion, in which I review the most important respects of this dissertation.

Chapter 2: Chalmers on Conceivability and Possibility

In this Chapter, I set the stage for an evaluation of Chalmers' theory of conceivability and possibility. In Part 1, I briefly introduce some relevant notions, such as modal monism, modal rationalism, logical possibility, etc., and then go on to explain in more detail the concepts of modal monism and modal rationalism. In Part 2, I discuss how Kripkean a posteriori necessities threaten modal monism and modal rationalism. In Part 3, I show how Chalmers explains away this type of counterexamples within the framework of 2-D semantics and re-establishes modal monism and modal rationalism on the grounds that there are no obvious counterexamples. In the last part, I sketch the whole picture of Chalmers' program on the relation between metaphysical possibility and ideal conceivability, which is defined as logical possibility.

1. Modal Monism and Modal Rationalism

The hypothesis of modal monism can be formulated as follows:

(MM) The space of logically possible worlds is co-extensive with the space of metaphysically possible worlds.

Metaphysical possibility characterizes how things could have been. For example, we can say, "Hillary Clinton could have won the presidential election", or, "Lily could have worn a yellow dress". Many things could have been different from how they actually are. How things could have been is neither epistemological nor agent-relative: It does not depend on what one thinks, believes, or knows.

In contrast, there is a kind of possibility that is epistemological and agent-relative: epistemic possibility. For example, we can say, "Hillary Clinton may have won the presidential election (because the latest opinion polls showed that Clinton's approval rating was higher than Trump's)", or, "Lily may have worn a yellow dress (because she has told me that she would wear the yellow one)". According to the standard view, epistemic possibility can be defined in the following way:

(EP) For any statement s , s is epistemically possible for an agent A iff A cannot rule out s a priori.

Epistemic possibility is relative to the status of an agent's knowledge or beliefs. A

statement may be epistemically possible for someone but not so for someone else who is endowed with better logical or mathematical skills. For example, the negation of Goldbach Conjecture (i.e., \neg GC) is epistemically possible for us ordinary people, since we cannot a priori rule out \neg GC. But someone with superior mathematical understanding and background knowledge can know a priori that \neg GC is false. So for her \neg GC is not epistemically possible.

Based on the notion of epistemic possibility, we can obtain an agent-independent notion of possibility by considering a limited case in which the possible agent is an ideal one. An agent is an ideal one if she has ideal rational capacities, or in other words, if she has no cognitive limitations. By introducing the notion of an ideal agent, we can say that s is epistemically possible for an ideal agent iff the ideal agent cannot rule out s a priori. Moreover, as generally accepted, to say that s is not ruled out by an ideal agent a priori is equivalent to say that s is not ruled out a priori. Hence, s is epistemically possible for an ideal agent iff s is not ruled out a priori. The type of epistemic possibility in this limited case is the so-called “logical possibility”.

I have to admit that it is not easy to define the notion of an ideal agent. What does “ideal rational capacities” mean? What does it even mean to have “a cognitive limitation to be idealized away from?”¹⁶ It is even to be determined whether this notion is coherent. In this dissertation, I follow Chalmers’ definition of an ideal agent: An agent A is an ideal one iff A ’s reasoning cannot be defeated by better reasoning. Nevertheless, one can ask further what “good reasoning” means. Again, I follow Chalmers and take all of these “rational notions as primitive”.¹⁷

Now we can formulate logical possibility as follows:

(LP) For any statement s , s is logically possible iff s is not a priori ruled out.

It is not difficult to see that logical modality, which is understood in terms of apriority, “has no special connection to modal logic”.¹⁸ Logic necessity/possibility, both in this dissertation and in Chalmers’ theory, include semantic necessity/possibility, conceptual necessity/possibility, etc. Because of this, logical necessity is more extensive than what can be deduced from a system of modal logic. Consider, for instance, these examples that are logically necessary but may not be consequences of

¹⁶ Chalmers (2002), p. 148.

¹⁷ Ibid.

¹⁸ Chalmers (2010), p. 185.

a modal logic system:

- $2+2=4$
- A bachelor is an unmarried man.
- Nothing is round and square (at the same time).

Consequently, some statements may be true in a logic system without being logically possible:

- $2+2\neq 4$
- A bachelor is not an unmarried man.
- Something is round and square (at the same time).

It is also worth noting that logical possibility is epistemological but not agent-independent: What is logically possible is not relevant to what we cannot rule out a priori. \neg GC is not ruled out a priori by ordinary persons, but it is ruled out a priori on ideal rational reasoning. Thus, although \neg GC is epistemically possible for us, it is not logically possible.

With the notions of metaphysical and logical possibility clarified, modal monists, who endorse that logical possibility and metaphysical possibility coincide, would accept the view of modal rationalism:

(MR_S) For any statement s , s is metaphysically possible iff s is not ruled out a priori.

They would also accept the equivalent formulation of MR_S:

(MR_S') For any statement s , s is metaphysically necessary iff s is a priori true.

In other words, for those who endorse modal monism and modal rationalism, a statement is necessarily true or necessarily false iff its truth-value is a priori knowable; a statement is contingent iff its truth-value is a posteriori knowable. That is to say, a modal rationalist would deny that there are a posteriori necessary statements and a priori contingent statements.

(Indeed, the notion of apriority and necessity concern different domains and areas. The former deals with epistemological issues, whereas the latter deals with metaphysical issues. But whether they are extensionally equivalent is another question.

One cannot conclude that they differ in extension merely by virtue of their meanings. If there are no obvious counterexamples to the claim that metaphysical possibility and logical possibility coincide, it is innocuous if we regard this claim as a plausible hypothesis. This is why modal monism and modal rationalism have a lot of advocates.)

2. A Threat to Modal Monism and Modal Rationalism

However, modal rationalism is confronted with obvious counterexamples that are constructed by Putnam (1972) and Kripke (1980). Kripke argues against modal monism and modal rationalism by putting forward the notion of a posteriori necessity and a priori contingency. In his view, apart from a priori necessary statements and a posteriori contingent statements, there are also a posteriori necessary statements and a priori contingent statements. In defense of his idea, Kripke makes two pairs of distinctions concerning singular terms: (a) rigid designator vs. non-rigid designator; (b) reference vs. reference-fixer.

A rigid designator is a term that picks out the same thing in all possible worlds in which that thing exists. On the contrary, a non-rigid designator picks out different things in different possible worlds. According to this view, “Donald Trump”, which is a proper name, is a rigid designator since it refers to Donald Trump in all possible worlds where Donald Trump exists. Except for proper names, indexical expressions and natural kind names are also rigid designators. For example, the indexical expression “I” singles out in all possible worlds the speaker who uses it. Or, for instance, “water”, which is a natural kind name, picks out the same kind, that is, water, in any possible world where water exists. By contrast, descriptions are usually regarded as non-rigid designators. For example, the expression “the 45th president of the US” is a non-rigid designator, for it does not pick out the same man, that is, Donald Trump, in all possible worlds. In another possible world, the 45th president of the US is not Donald Trump.

To illustrate the difference between rigid and non-rigid designators, we can take the following two sentences as examples:

- (1) Donald Trump is Ivanka Trump’s father.
- (1’) The 45th president of the US is Ivanka Trump’s father.

Since both “Donald Trump” and “Ivanka Trump” are proper names, they refer rigidly. They refer to Donald Trump and Ivanka Trump in all worlds, respectively. Given that Donald Trump and Ivanka Trump exemplify the relation of *being the father of*, it is necessary that they exemplify this two-place relation.¹⁹ Hence, (1) is necessarily true. By contrast, the term “the 45th president of the US” picks out different people in different worlds. In other words, there is a world in which the 45th president of the US is someone other than Donald Trump. Since in that world Ivanka Trump’s father is nevertheless Donald Trump, in that world the 45th president of the US is not Ivanka Trump’s father. Hence, (1’) is not necessarily true.

For the same reason, for each pair of statements in the following, the former statement is necessarily true but the latter is not.

- (2) Water is H₂O.
- (2’) Water is watery stuff.

- (3) I am Shuyi.
- (3’) The author of the dissertation is Shuyi.

The distinction between reference and reference-fixer has a connection with that between rigid designator and non-rigid designator. The way we associate a name, which is a rigid designator, with a definite description, which is a non-rigid designator, is to introduce this name in a language with the help of a description and use this name to single out the thing that satisfies the description. For example, when we first see the watery stuff (let us assume that the term “watery stuff” is short for “transparent, colorless and odorless fluid that fills in Earth’s lakes and oceans”), we introduce the name “water” into our language, in this case, English, with the help of the description “watery stuff”. From then on, we use the name “water” to single out anything that satisfies the description “watery stuff” in the actual world.

In the same way, we introduce the natural kind name “gold” with the help of the description “bright and slightly reddish yellow metal” and use it to pick out anything that is a bright and slightly reddish yellow metal in the actual world. By the same token, the proper name “Phosphorus” is introduced by using the description “the brightest star in the morning” and is used to pick out the object that is the brightest star in the morning in the actual world. In a word, what a name refers to in the actual

¹⁹ Let us assume that the principle of essentiality of origins is true.

world hinges on what the description by which this name is introduced picks out in the actual world. Or, the reference of a name can be fixed by a description.

However, we should note the difference of how names and descriptions work when we use them to describe another possible world. The description “watery stuff” picks out anything that is watery stuff in that world, even though this stuff is not comprised of hydrogen and oxygen. By contrast, the name “water”, as a rigid designator, picks out H_2O in that world.

With these points made, we are in a position to know why there are a priori contingencies. In the case of water, since we introduce the name “water” with the help of the description “watery stuff”, any competent speaker of English will know that water is watery stuff a priori.²⁰ Thus, the statement “water is watery stuff” is a priori true. In this statement, “water”, as a rigid designator, picks out the same thing in all possible worlds, whereas “watery stuff”, which is a non-rigid designator, picks out different things across possible worlds. Thus, in some possible worlds, “water” and “watery stuff” pick out different things. In other words, “water is watery stuff” is not necessarily true.

To see why there are statements that are necessarily true without being a priori true, we can take the sentence “water is H_2O ” as an example. No one can know a priori what water is comprised of. Chemists had to carry out thousands of experiments in order to find out that water is H_2O . Hence, the statement “water is H_2O ” can only be known in an a posteriori way. Moreover, in this statement, “water” and “ H_2O ” are both rigid designators. Given that they pick out the same thing in the actual world, they pick out the same thing throughout all possible worlds. Put differently, “water is H_2O ” is necessarily true.

If Kripke is right, then at the level of statements, apriority and necessity come apart. Some statements are a priori true and contingent, some statements are a posteriori true and necessary. In other words, if Kripke is right, then MR_S and MR_S' are false. Since logical possibility can be characterized in terms of apriority, it follows that logical possibility and metaphysical possibility do not coincide at the level of statements. This opens up the possibility of modal dualism:

²⁰ Please note by “a priori”, I merely mean that one can know a priori that water is watery stuff if one knows how to use, or knows the meaning of, the terms “water” and “watery stuff”. It does not follow that one can know how to use, or know the meaning of, the terms “water” and “watery stuff” a priori. To know the latter, empirical experiences are indispensable.

(MD) The space of logically possible worlds is not co-extensive with the space of metaphysically possible worlds.

According to modal dualists, Kripke's examples not only show that logical modality and metaphysical modality differ in extension at the level of sentences, but they also reflect a difference at the level of worlds. Modal monists, such as Chalmers and Jackson, hold the opposite view. According to them, Kripke's a priori contingencies and a posteriori necessities just arise at the level of language, but not at the level of metaphysics.

It is the proposition which is expressed by a sentence that is the truth-bearer of this sentence. To say that a sentence is true in a possible world is to say that the proposition it expresses is true in a possible world. That apriority and necessity come apart at the level of sentences does not entail that they come apart at the level of propositions or worlds. If at the level of propositions, there is a way to explain away the Kripkean a priori contingencies and a posteriori necessities, then at this level the hypothesis of modal monism and modal rationalism remains intact. For this purpose, Chalmers introduces his *two-dimensional (2-D) semantics*.²¹

3. Modal Monism and Modal Rationalism Revisited

According to two-dimensionalists, any statement is associated with two propositions, or "intensions", namely, to use Chalmers' terminology, a primary and a secondary intension. In Chalmers' view, the Kripkean a priori contingencies arise because the primary intension of an a priori contingent statement is a priori and the secondary intension of it is contingent; the Kripkean a posteriori necessities arise because the primary intension of an a posteriori necessary statement is a posteriori and the secondary intension of it is necessary. If we distinguish the two intensions of a statement, we will find that at the level of propositions, there are no so-called "a priori contingent propositions" or "a posteriori necessary propositions".²²

Let us take the term "water" as an example. Assume that in our model, there are only two worlds, the actual world *a* and another possible world *w*. In the actual world

²¹ For more details about a generalized 2-D semantic framework, which is used to isolate an a priori aspect of meaning, see Chalmers (1996); (2002); (2004); (2006); Jackson (1998); (2004). For the earlier work of 2-D semantics, see Kaplan (1989a), (1989b). A difference is that Kaplan's framework is used to explain semantic rules governing only indexical expressions like "here", "I", "this", etc.

²² Some philosophers deny that the Kripkean a priori contingencies and a posteriori necessities can be explained away using Chalmers' 2-D semantics. For these objections, see Soames (2005); Roca-Royes (2011), etc.

a , we introduce name “water” by using the description “watery stuff”. Moreover, this watery stuff in world a is H_2O , which is comprised of hydrogen and oxygen. In world w , the name “water” is also introduced by the description “watery stuff”. The watery stuff in w is XYZ, which is substance that plays the role of water but has a different chemical structure. Now we can consider the following question:

What does the name “water” refer to in w ?

There are two ways to understand and answer this question, both of which depend on how we consider the world w . Firstly, we can consider the world w as *actual*. In a possible world considered as *actual* (for example, in Putnam’s Twin-Earth world), anything fitting the description “watery stuff” is water, no matter what it is comprised of. In this case, the name “water” picks out XYZ in w .²³ In other words, we can interpret the question in the following way: If w is considered as *actual*, what does “water” refer to? The answer to this question is: “XYZ”. (Moreover, given that “water” refers to XYZ if we consider w as the actual world, “water” refers to XYZ in any possible world if that world is considered as counterfactual.)

Secondly, we can consider w as a counterfactual world. Given that “water” refers to H_2O in the actual world, it refers to H_2O in all possible worlds considered as counterfactual. Hence, “water” refers to H_2O in w . In this case, we interpret the question in another way: If w is considered as *counterfactual*, what does “water” refer to? The answer is “ H_2O ”. Below is a table to show the two understandings of what the term “water” refers to:

Table 1

	World a	World w
World a as actual	H ₂ O	H ₂ O
World w as actual	XYZ	XYZ

The distinction of the two understandings can be explained within the framework of 2-D semantics. In possible-world semantics, a linguistic expression is associated with one extension and one intension. The extension of a name is the object that it

²³ See Putnam (1972).

refers to; the intension of a name is a function from possible worlds to its references. The extension of a sentence is its truth-value; the intension of a sentence is a function from possible worlds to its truth-values. By contrast, in 2-D semantics, a linguistic expression is associated with two extensions and intensions. Put differently, there is only one way in which possible-world semantics assigns an intension to an expression, but there are two ways in which 2-D semantics does so.

Within the framework of 2-D semantics, one intension, that is, the so-called “primary intension”, of a term is a function from possible worlds when considered as actual to its references.²⁴ In the case of water, if world w turned out to be the actual world, “water” would refer to the watery stuff in w , that is, XYZ. Given that world a turns out to be actual, “water” refers to the watery stuff in a , that is, H_2O . In other words, the intension of the term “water” maps a to H_2O , and maps w to XYZ. Roughly speaking, we can say that the primary intension of “water” is “watery stuff”. The other intension, that is, the so-called “secondary intension”, of a term is a function from possible worlds when considered as counterfactual to its references.²⁵ In the case of water, given that world a is the actual world and “water” refers to H_2O in world a , “water” refers to H_2O in any possible world considered as counterfactual, no matter whether or not H_2O is watery stuff in that world. We can say that the secondary intension of “water” is “ H_2O ”.

Like names, a sentence also has two intensions. Let us take the sentence “water = H_2O ” as an example. We can consider the question:

Is the sentence “water = H_2O ” true in world w ?

There are two interpretations and two answers to this question. Firstly, we can interpret the question as meaning “if w turned out to be actual, would the sentence ‘water = H_2O ’ be true in world w ?” The answer to this question is “no”. If w turned out to be the actual world, then the watery stuff in w , namely XYZ, would be water. In this case, the sentence “water = H_2O ” would be false in world w . (Moreover, given that “water = H_2O ” is false in world w if we consider w as the actual world, “water = H_2O ” is false in any possible world if it is considered as counterfactual.) Secondly, we can interpret the question as meaning “given that ‘water = H_2O ’ is true in the actual world a , is the sentence ‘water = H_2O ’ true in the possible world w if it is considered

²⁴ See Chalmers (2006), pp. 585-586.

²⁵ Ibid.

as counterfactual?” Given that water is H_2O in the actual world, water is H_2O in any possible world if that world is considered as counterfactual. Hence, the answer is “yes”. Below is the table to show the two understandings of the truth-value of the sentence “water = H_2O ”:

Table 2

	World a	World w
World a as actual	T	T
World w as actual	F	F

We can also explain the distinction of the two interpretations by appealing to 2-D semantics. Within the framework of 2-D semantics, the primary intension of a sentence is a function from possible worlds considered as actual to its truth-values. The sentence “water = H_2O ” is true in world a and false in world w if we consider these worlds as actual. Roughly speaking, we can say that the primary intension of this sentence is “watery stuff = H_2O ”. The secondary intension of a sentence is a function from possible worlds considered as counterfactual to its truth-values. The sentence “water = H_2O ” is true in both world a and world w if we consider these worlds as counterfactual. The secondary intension of the sentence “water = H_2O ” is “ $H_2O = H_2O$ ”.

Now it is not difficult to see why Kripkean a priori contingencies and a posteriori necessities can be explained away within the framework of 2-D semantics. Let us take the sentence “water is watery stuff” as an example of a priori contingent sentences. Its primary intension is “watery stuff is watery stuff”, which is an a priori necessary proposition. Its secondary intension is “ H_2O is watery stuff”, which is an a posteriori contingent proposition. Thus, neither intension of an a priori contingent sentence is a so-called “a priori contingent proposition”.

Let us take the sentence “water = H_2O ” as an example of a posteriori necessary sentences. Its primary intension is “watery stuff is H_2O ”, which is an a posteriori contingent proposition. Its secondary intension is “ H_2O is H_2O ”, which is an a priori necessary proposition. Thus, neither intension of an a posteriori necessary sentence is a so-called “a posteriori necessary proposition”. In a word, Kripkean a priori

contingencies and a posteriori necessities merely arise at the level of sentences but not at the level of propositions. If 2-D semantics is assumed, then it is innocuous to assume that apriority and necessity at the level of propositions coincide. In other words, if 2-D semantics is assumed, the following thesis has no obvious counterexamples:

(MR_p) For any proposition p , p is metaphysically necessary iff p is a priori true.

MR_p is equivalent to MR_p':

(MR_p') For any proposition p , p is metaphysically possible iff p is not a priori ruled out.

Since saying that p is not a priori ruled out is saying that p is logically possibly true, MR_p' is equivalent to MR_p'':

(MR_p'') For any proposition p , p is metaphysically possible iff p is logically possible.

MR_p'' is the equivalent expression of modal monism. In other words, by introducing 2-D semantics, both modal rationalism established at the level of propositions and Kripkean cases can be accommodated by appealing to only one modality. The hypothesis that the space of logically possible worlds and that of metaphysically possible worlds are co-extensive remains intact.

4. An Epistemology of Modality: the CP Thesis

Chalmers' theory of conceivability is grounded in the hypothesis of modal monism and 2-D semantics. Ideal conceivability, as defined by Chalmers, is equivalent to logical possibility. Since the hypothesis that logical possibility and metaphysical possibility coincide can hold if 2-D semantics is assumed, the hypothesis that ideal conceivability is co-extensive with metaphysical possibility can also hold within the framework of 2-D semantics.

However, the entailment from possibility to ideal conceivability is not essential to our discussion. This is because in order to establish an epistemology of modality, we merely need to find a guide from conceivability to possibility, not vice versa. For

this reason, I focus my discussion in this dissertation on how Chalmers defines ideal conceivability and how he establishes the entailment from conceivability to possibility only.

To find out which kind of conceivability entails possibility, Chalmers makes three pairs of distinctions:

1. Primary vs. secondary conceivability
2. *Prima facie* vs. ideal conceivability
3. Positive vs. negative conceivability

4.1 Primary Vs. Secondary Conceivability

The first distinction is used to overcome the problem from Kripkean a posteriori necessities. The notion of conceivability is tightly linked to apriority and other rational notions. Based on this understanding, we always seem to be able in some sense to conceive of situations in which water is not H₂O. If conceivability entails possibility, then we have to conclude that it is possible that water is not H₂O. However, as Kripke points out, the statement “water = H₂O” is necessarily true. If Kripke is right, then conceivability cannot be considered a guide to possibility.

But this kind of counterexamples will not arise within the framework of 2-D semantics. As has been mentioned, 2-D semantics assigns two intensions to any statement, namely a primary and a secondary intension. The two intensions result in two different ways in which a statement can be conceivable and possible. Below are some definitions concerning conceivability and possibility in Chalmers’ 2-D framework:

- (PC) A statement *s* is primarily conceivable (1-conceivable) iff its primary intension is conceivable.
- (SC) A statement *s* is secondarily conceivable (2-conceivable) iff its secondary intension is conceivable.
- (PP) A statement *s* is primarily possible (1-possible) iff its primary intension is possible.
- (SP) A statement *s* is secondarily possible (2-possible) iff its secondary intension is possible.

Correspondingly, primary necessity (1-necessity) and secondary necessity (2-necessity), respectively, can be defined as follows:

(PN) A statement s is primarily necessary (1-necessary) iff its primary intension is necessary.

(SN) A statement s is secondarily necessary (2-necessary) iff its secondary intension is necessary.

Based on the definitions of conceivability and possibility in 2-D framework, two conceivability-to-possibility entailments at the levels of propositions can be formulated:

(CP₁) For any statement s , that it is 1-conceivable that s entails that it is 1-possible that s . (In other words, for any statement s , that the primary intension of s is conceivable entails that the primary intension of s is possible.)

(CP₂) For any statement s , that it is 2-conceivable that s entails that it is 2-possible that s . (In other words, for any statement s , that the secondary intension of s is conceivable entails that the secondary intension of s is possible.)

As Chalmers asserts, if we distinguish the two senses of conceivability and possibility, then the Kripkean counterexamples can be explained away. For example, the statement “water is not H₂O” is 1-conceivable, which means that its primary intension — the proposition “watery stuff is not H₂O” — is conceivable. By CP₁, it follows that “watery stuff is not H₂O” is possibly true. However, the observation that this proposition is possibly true poses no threat to CP₁, since the statement “water is H₂O” is not 1-necessarily true. Secondly, the proposition “H₂O is not H₂O”, as the secondary intension of the statement “water is not H₂O”, involves a logical contradiction. Hence, it is not conceivable at all. Thus, at the level of propositions, there are no counterexamples from a posteriori necessities.

According to Chalmers, counterexamples of this kind arise because we take 1-conceivability as a guide to 2-possibility. From the fact that it is conceivable that watery stuff is not H₂O, we can only draw the conclusion that it is possible that

watery stuff is not H₂O, not, however, that it is possible that H₂O is not H₂O. In other words, it is invalid to infer that it is 2-possible that water is not H₂O from the fact that it is 1-conceivable that water is not H₂O. If we avoid taking 1-conceivability as a guide to 2-possibility, counterexamples from a posteriori necessities will not arise.

Another aspect worth noting is that CP₂ does not always have practical use in philosophical discussions.²⁶ A necessary condition to know whether a statement *s* is 2-conceivable requires that we know what the secondary intension of *s* is. For example, to know whether the statement “water is not H₂O” is 2-conceivable requires that we acquire its secondary intension “H₂O is not H₂O”. However, the secondary intension is not always acquired in an a priori way. To know the secondary intension of “water is not H₂O” requires that we know what “water” refers to in the actual world, which further requires empirical evidence. So without necessary empirical evidence, we cannot know what the secondary intension of “water is not H₂O” is, let alone determine whether its secondary intension is conceivable.

Therefore, CP₂ cannot assist us if we do not grasp the secondary intension of a sentence. On the contrary, we always gain a priori access to the primary intension of a sentence. Any competent speaker who knows the meaning of “water” can grasp the primary intension of “water is not H₂O” without any empirical experience. This is why CP₁ plays a central role in philosophical discussions.

Since we cannot always know a priori whether what a statement says is 2-conceivable in practice, the entailment between 2-conceivability and metaphysical possibility does not always have practical use. But if this is the case, then one problem naturally arises: It is 2-possibility, rather than 1-possibility, that characterizes metaphysical possibility, which is our central concern. When we ask whether it is metaphysically possible that water is not H₂O, we pose the following question: Given what water is in the actual world (that is, H₂O), is there a possible world in which actual water (that is, H₂O) is not H₂O? We are not asking this question: Is there a possible world in which the substance playing the role of water is not H₂O, no matter what this substance is comprised of? In view of this, we can say that there is a gap between CP₁, which as an epistemology of modality is immediately available to us, and 2-possibility, which we have to establish. Our central concern is 2-possibility, but we can only resort to 1-conceivability, which is merely a guide to 1-possibility.

²⁶ See Chalmers (2002), p. 162.

But the gap will disappear if a statement's primary intension and secondary intension coincide. In that case, it will be safe to draw the conclusion that a statement is 2-possible from the fact that what it says is 1-conceivable. Many philosophers are aware that some statements have the same primary and secondary intensions and validly infer that these statements are 2-possible from the fact that they are 1-conceivable. For example, a key premise of Kripke's modal argument against type identity theory is that the terms "pain" and "C-fiber firing" have the same primary and secondary intensions, respectively. In this case, if it is 1-conceivable that pain is not C-fiber firing, we can validly deduce that it is 2-possible that pain is not C-fiber firing. In Chalmers' conceivability argument against materialism, P and Q, which respectively stand for a conjunction of all of our world's microphysical truths and an arbitrary phenomenal conscious truth of our world, also have the same primary and secondary intensions. In this case, if it is 1-conceivable that P holds without Q being true, it is 2-possible that P holds without Q being true. Here are some other sentences that have the same primary and secondary intensions:

- GC is false.
- It is necessary that an omniscient, omnipotent, and morally perfect being exists.
- Conceivability does not entail possibility.
- It is necessary that $PT \rightarrow Q$. (P, T and Q respectively stand for a conjunction of all of our world's microphysical truths, a statement which says that "that is all" and an arbitrary phenomenal conscious truth of our world.)

By distinguishing the primary and secondary intension of a statement, Chalmers actually establishes a principle linking conceivability and possibility at the level of propositions. CP₁ and CP₂ in fact are equivalent expressions of the following thesis:

For any proposition p , that it is conceivable that p entails that it is possible that p .

But a question poses itself:

Given that conceivability entails possibility at the level of propositions, what exactly is conceivability?

The other two pairs of distinctions, namely the distinction between *prima facie*

conceivability and ideal conceivability, and that between negative conceivability and positive conceivability, are used to answer this question.

4.2 *Prima facie* Vs. Ideal Conceivability

It is *prima facie* conceivable for an agent A that p iff A cannot rule out p a priori or A can imagine a situation in which p is true.²⁷ According to this definition, *prima facie* conceivability is relative to an agent's epistemic status. If an agent A has cognitive limitations, then what she cannot rule out a priori or what she can imagine may involve contradictions. If this is the case, then what the proposition p says, which is *prima facie* conceivable for A , is not logically possible, and therefore also fails to be metaphysically possible. In a word, *prima facie* conceivability is not a guide to possibility.

For example, according to the definition, both GC (Goldbach's Conjecture) and \neg GC are *prima facie* conceivable for us. We, who lack sufficient mathematical skill and understanding, cannot rule out a priori either GC or \neg GC. Moreover, we can imagine a situation in which mathematicians claim that GC is true and imagine another situation in which mathematicians claim that \neg GC is true. However, it cannot be the case that GC is both possibly true and possibly false. Hence, if a conceivability-to-possibility entailment is to be established, the kind of conceivability cannot be *prima facie* conceivability.

Ideal conceivability requires ideal rational reflection. To characterize the notion of ideal reflection, there are generally two approaches. Menzies defines ideal reflection by invoking an ideal reasoner, which is a possible agent that is free from cognitive limitations.²⁸ However, as Chalmers points out, it is not clear that the notion of an ideal agent is coherent. It may be the case that for any ideal agent, there is a better one. To avoid this problem, Chalmers defines ideal reflection by appealing to the "notion of undefeatability by better reasoning".²⁹ In this dissertation, I put aside the difference between the two approaches and consider them as equivalent: To say A is an ideal agent is to say that A 's rational reflection cannot be defeated by better reasoning. Defined in this way, ideal conceivability is agent-independent. Whether it is ideally conceivable that p does not depend on the background

²⁷ The definition here involves the notion of negative conceivability and positive conceivability, on which I will elaborate in the following.

²⁸ See Menzies (1998), p. 269.

²⁹ See Chalmers (2002), p. 148.

knowledge of a conceiver. Because of this, it is illegitimate to say that it is ideally conceivable *for us* that p . Moreover, that we can conceive of a situation in which p is true cannot be considered as evidence that p is ideally conceivable; that we cannot conceive of what p says cannot be considered as evidence that p is not ideally conceivable, either. In a word, what we can conceive of or our ability of conceiving of something is irrelevant to the issue of whether a given p is ideally conceivable.

Moreover, according to Chalmers, ideal conceivability equals logical possibility. This is easier to see if we combine the distinction between negative conceivability and positive conceivability with the notion of ideal conceivability.

4.3 Negative Vs. Positive Conceivability

The *prima facie* version of negative conceivability can be formulated as follows:

(FPNC) For a proposition p , it is *prima facie* negatively conceivable that p for an agent A iff A cannot rule out p a priori. In other words, it is *prima facie* negatively conceivable that p for an agent A iff A cannot find a contradiction in p .

The ideal version of negative conceivability can be formulated as follows:

(INC) For a proposition p , it is ideally negatively conceivable that p iff p is not ruled out a priori. In other words, it is ideally negatively conceivable that p iff there is no contradiction in p .³⁰

As to positive conceivability, Chalmers draws the analogy to imagination: “To positively conceive of a situation is to in some sense imagine a specific configuration of objects and properties.”³¹ Moreover, he distinguishes two kinds of positive imagination: perceptual imagination and modal imagination. An agent A perceptually imagines the state of affair that a proposition p represents iff she perceptually forms a mental image in which p is the case. For example, one perceptually imagines a pig flying iff one forms a visual image of a flying pig.³²

However, as Chalmers points out, some situations are beyond the scope of perceptual imagination. He provides two examples, such as that we cannot

³⁰ Chalmers (2002), p. 150.

³¹ Ibid.

³² Ibid.

perceptually imagine the molecules of H₂O or perceptually imagine that Germany won World War II.³³ Another, though more contentious example, is that the existence of my zombie twin, who is a microphysical duplicate of mine but has no phenomenal consciousness, cannot be fully perceptually imagined. We can merely perceptually imagine a zombie's position, figure, color of skin, etc., that is, her *outward* aspects. However, we cannot perceptually imagine what it is like for her to be in pain or to see a green leaf. In other words, her inner aspects cannot be grasped by appealing to perceptual imagination. Some further examples that are beyond the scope of perceptual imagination are listed below (it is not hard to see that most of them are commonly found in philosophical discussions):

- GC is false.
- Pain \neq C-fiber firing.
- It is necessary that an omniscient, omnipotent, and morally perfect being exists.
- Conceivability does not entail possibility.
- Phenomenal properties supervene on microphysical properties.

...

For any proposition listed above, we cannot form a perceptual image of the situation it represents, but we can nevertheless imagine what it represents in some sense. This is because we can provide a description of a situation (that is, a configuration of objects and properties) in which the proposition at hand is true. Chalmers calls this kind of imagination "modal imagination". Although it is a guide to possibility, perceptual imagination, due to its limitations, cannot play a role in most philosophical discussions. For this reason, Chalmers gives up perceptual imagination and turns to modal imagination to establish an epistemology of modality.

According to him, to modally imagine a situation in which a proposition p is true is to construct a set of propositions that verify p . In addition, Chalmers puts forward the notion of coherent modal imagination. To coherently modally imagine something requires the consistency of the set of propositions one constructs. In Chalmers view, coherent modal imagination is the only reliable guide to possibility. Moreover, it is worth noting that the notion of verification is not well-defined. A usual interpretation

³³ See Chalmers (2002), p. 151.

is to read verification as logical entailment: If there is a truth assignment under which each proposition in a set Γ is true without p being true, then Γ does not verify p .³⁴

By introducing the notion of *prima facie* conceivability, we can formulate the *prima facie* version of positive conceivability:

(PFPC) For a proposition p , it is *prima facie* positively conceivable that p for an agent A iff A can construct a set of propositions, Γ , such that A regards Γ as verifying (or entailing) p and A cannot find a contradiction in Γ .³⁵

It is relatively easy for us to determine whether a proposition p is the logical consequence of a set of propositions. But it may be difficult to tell whether or not a given set of propositions is consistent. Sometimes, due to our cognitive limitations, what we take to be consistent may not actually be consistent. In this case, what we can modally conceive of may not be logically possible, and may therefore fail to be metaphysically possible. This is why PFPC cannot be a guide to possibility. But this problem will not arise if the agent in question is an ideal one. By appealing to the notion of an ideal agent, we can formulate the ideal version of positive conceivability:

(IPC) For a proposition p , it is ideally positively conceivable that p iff there is a consistent set of propositions, Γ , such that Γ verifies (or entails) p .³⁶

In Chalmers' view, both INC and IPC are reliable guides to possibility. Based on INC and IPC, two refined versions of CP can be formulated:

(CP−) For any proposition p , that it is ideally negatively conceivable that p entails that it is possible that p .

(CP+) For any proposition p , that it is ideally positively conceivable that p entails that it is possible that p .

For the remainder of this dissertation, I will use the term “the CP thesis” or “CP” to refer to either CP− or CP+. It is not difficult to see that INC and IPC are actually defined equivalent to logical possibility. There are generally two ways to characterize logical possibility. These two definitions, respectively, are also how Chalmers defines

³⁴ See Chalmers (2002), p. 152.

³⁵ See Chalmers (2002), p. 153.

³⁶ Ibid.

ideal conceivability. As has been said, the first way to characterize logical possibility is to resort to apriority. Consequently, it is natural to define ideal conceivability in terms of what is not ruled out a priori. Moreover, to say that p is not a priori ruled out is to say that p is not contradictory. This is why p is ideally negatively conceivable iff p is contradiction-free.³⁷

Another way to characterize logical possibility is to invoke the notion of a maximal consistent set. If p is logically possible, then there is at least one maximal consistent set in which p is true. But if we were required to construct a maximal consistent set in order to know that it is ideally conceivable that p , that would be a requirement too demanding to be met. In this case, the practical significance of CP as an epistemic guide to possibility would be negligible. This is why Chalmers turns to the notion of verification (at the cost that the notion of verification is not well-defined). According to him, it is equivalent to say that p is verified by a consistent set and to say that p is logically possible. If Chalmers is right, then both INC and IPC are equivalent to logical possibility. From this, some consequences follow.

For one thing, the counterexample from the GC case can be explained away. \neg GC is *prima facie* conceivable, but *prima facie* conceivability does not entail possibility. Hence, it is not valid to infer that \neg GC is possibly true from the fact that \neg GC is *prima facie* conceivable. In addition, \neg GC is a priori false. By definition, \neg GC is neither ideally negatively conceivable nor ideally positively conceivable. For this reason, the case of GC poses no threat to the CP thesis. For another thing, the main idea of CP (both CP– and CP+) is that logical possibility entails metaphysical possibility, from which it follows that all necessary propositions (i.e., propositions that are either necessarily true or necessarily false) are either a priori true or a priori false. The following reasoning can also reveal this consequence:

According to CP– and the definition of INC:

(CP–) For any proposition p , that it is ideally negatively conceivable that p entails that it is possible that p .

(INC) For any proposition p , that it is ideally negatively conceivable that p iff p is not a priori ruled out.

³⁷ For the remainder of this dissertation, expressions like “logically possible,” “contradiction-free,” “consistent,” “not ruled out a priori” will be used as equivalents.

We can conclude (1) and (2):

- (1) For any proposition p , if p is not a priori false, then p is possibly true.
- (2) For any proposition p , if $\neg p$ is not a priori false, then $\neg p$ is possibly true.

(1) is equivalent to (3):

- (3) For any proposition p , if p is necessarily false, then p is a priori false.

(2) is equivalent to (4):

- (4) For any proposition p , if p is necessarily true, then p is a priori true.

Based on (3) and (4), (5) holds:

- (5) For any proposition p , if p is either necessarily true or necessarily false, then p is a priori true or a priori false.

Moreover, the claim that p is either necessarily true or necessarily false can be formalized as $\Box p \vee \Box \neg p$, which is equivalent to $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$.³⁸ So (5) is equivalent to (6):

- (6) For any proposition p , if $\Box p \vee \Box \neg p$ (i.e., $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$) holds, then p is a priori true or a priori false.

To conclude this chapter, let me summarize how Chalmers establishes the link between conceivability and possibility on the basis of modal monism and 2-D semantics: Modal monism — the hypothesis that metaphysical possibility and logical possibility coincide — has been severed by Kripke's arguments for a posteriori necessities and a priori contingencies. By introducing 2-D semantics, which assigns two intensions (i.e., propositions) to any statement, the a posteriori necessities and a priori contingencies can be explained away at the level of propositions. Thus, modal

³⁸ Here is the proof of why $\Box p \vee \Box \neg p$ is equivalent to $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$. First, let us consider why $\Box p \vee \Box \neg p$ entails $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$. $\Box p \vee \Box \neg p$ is equivalent to $\neg \Box p \rightarrow \Box \neg p$. Since $\neg \Box p$ is equivalent to $\Diamond \neg p$, and for any p , $\Box \neg p \rightarrow \neg p$ holds, therefore, $\neg \Box p \rightarrow \Box \neg p$ entails $\Diamond \neg p \rightarrow \neg p$. Moreover, $\Box p \vee \Box \neg p$ is equivalent to $\neg \Box \neg p \rightarrow \Box p$. $\neg \Box \neg p$ is equivalent to $\Diamond p$, and for any p , $\Box p \rightarrow p$ holds. Therefore, $\neg \Box \neg p \rightarrow \Box p$ entails $\Diamond p \rightarrow p$. Thus, $\Box p \vee \Box \neg p$ entails $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$. Then let us consider why $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$ entails $\Box p \vee \Box \neg p$. $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$ is equivalent to $(p \rightarrow \Box p) \wedge (\neg p \rightarrow \Box \neg p)$. For any p , $\Box p \rightarrow p$ and $\Box \neg p \rightarrow \neg p$ hold. Therefore, if $(p \rightarrow \Box p) \wedge (\neg p \rightarrow \Box \neg p)$ is true, both $p \leftrightarrow \Box p$ and $\neg p \leftrightarrow \Box \neg p$ hold. Since for any p , $p \vee \neg p$ holds, hence, $\Box p \vee \Box \neg p$ is true. Thus, $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$ entails $\Box p \vee \Box \neg p$. As a result, $\Box p \vee \Box \neg p$ is equivalent to $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$.

monism remains intact within the framework of 2-D semantics.

A consequence that follows from modal monism is that logical possibility entails metaphysical possibility. Moreover, there are generally two ways to define logical possibility. These two ways are how Chalmers defines ideal conceivability. This explains why the CP thesis is immune to obvious counterexamples: The idea behind CP is that logical possibility entails metaphysical possibility. Since the latter hypothesis is immune to obvious counterexamples, so is the former.

Chapter 3: Is the CP Thesis Qualified as a Modal Epistemology?

In Chapter 2, I have shown how Chalmers establishes the CP thesis. According to Chalmers, ideal conceivability and logical possibility are equivalent. Some consequences follow from this: Firstly, in order to show that it is ideally conceivable that p , we can demonstrate that it is logically possible that p ; in order to show that it is logically possible that p , we can also demonstrate that it is ideally conceivable that p . Secondly, the notion of ideal conceivability (i.e., logical possibility) is agent-independent: Whether a proposition is ideally conceivable (i.e., logically possible) does not depend on what we know or believe, or which concepts are available to us.³⁹

However, our *judgments* about what is ideally conceivable or logically possible are relative to our epistemic status. Given our cognitive limitations, in some cases, it may be too challenging for us to know or have evidence for whether a given proposition is ideally conceivable (i.e., logically possible). If this is the case, ideal conceivability cannot provide us with an epistemic guide to what is metaphysically possible, and therefore, the CP thesis is not qualified to be a modal epistemology. In this chapter, I discuss a series of criticisms that assert that the CP thesis is not qualified as an epistemology of modality.

According to one extreme critique, for *any* proposition p , we can never know or be justified in believing that it is ideally conceivable that p . Hanrahan (2009) and Bailey (2007) are proponents of this view. As to ideal positive conceivability (IPC), they argue that we face a regress when we try to provide a justification for p 's ideal conceivability. They therefore claim that we can never know or have evidence that a given proposition is ideally positively conceivable. According to Hanrahan, the regress will come to an end, but that end is only reached when we can construct a maximal consistent set, which is beyond our reach. In this case, the justification of a conceivability claim cannot be achieved. According to Bailey, the regress is an infinite one. In this case, the justification of a conceivability claim cannot be achieved,

³⁹ It seems that the notion of conceivability merely applies to situations, but not to statements or propositions. But as defined by Chalmers, ideal conceivability and logical possibility are equivalent. So it will be acceptable if I use " p is ideally conceivable" to express that it is ideally conceivable that p , just like we can use " p is logically possible" to express that it is logically possible that p . However, I will not use " p is *prima facie* conceivable" to express that it is *prima facie* conceivable that p .

either.

As to ideal negative conceivability (INC), Hanrahan argues that in order to determine whether p is ideally negatively conceivable requires that we examine all the logical consequences of p , the number of which is infinite. However, we are not able to do so. As a result, she concludes that for any proposition p , we cannot know or have evidence for whether it is ideally negatively conceivable that p .

Worley (2003) proposes a less extreme critique. She argues that for *some* proposition p , we cannot know or be justified in believing that it is ideally conceivable that p . In what follows immediately, she argues that since there are some propositions such that we cannot know or have evidence for whether they are ideally conceivable, we cannot know or have evidence for whether the existence of zombies (who are our microphysical duplicates but lack phenomenal consciousness) is ideally conceivable. As a result, she concludes that the soundness of Chalmers' zombie argument, which depends on the premise that the existence of zombies is ideally conceivable, is not justified.

In this chapter, I examine these criticisms and the arguments in support of them in turn. In my view, the extreme critique of CP+ is not tenable because each version of the regress arguments involves a false premise. As to the critical view of CP–, I argue that Hanrahan proposes a requirement that is too demanding and that we do not have to fulfill. Thus, I think the extreme critique of the CP thesis collapses.

As to Worley's first argument, I think it is enlightening (although it involves some misunderstanding of Chalmers' theory); as to her second argument, I think she is too quick in drawing her conclusion. By her first argument, she just tells us that there are some propositions such that to know or have evidence for whether they are ideally conceivable is beyond our reach. But she does not specify the ideal conceivability of what kind of propositions cannot be known or justified. So she leaves it to be determined whether we cannot know or have evidence that the existence of zombies is ideally conceivable. At the end of this chapter, on the basis of Worley's first argument, I move one step further by specifying in which cases we cannot know or have evidence that a given proposition is ideally conceivable.

1. Hanrahan and Bailey's Regress Arguments

1.1 Hanrahan's Argument

Hanrahan and Bailey respectively argue that when CP+ is applied, we face a regress. I call their arguments together “regress arguments”. But there is a difference between these arguments: According to Hanrahan, the regress is finite; in Bailey’s view, it is infinite. I will first discuss Hanrahan’s argument, then followed by a discussion of Bailey’s argument.

In her paper *Consciousness and Modal Empiricism*, Hanrahan makes the following claims:

Say I positively conceive of *S*, and hence declare *S* possible. But say someone questions my modal declaration. (Let’s refer to my interlocutor here as ‘the modal skeptic.’) The modal skeptic would be justified in asking me about the details of the situation I have intuited. And I would be obligated to demonstrate that those details in fact cohere and verify *S*, for I am the one who has declared *S* possible. And if the skeptic isn’t satisfied with the details I have offered, she could legitimately demand more and then more again...Given this, the demands of this persistent modal skeptic can and should ultimately require me to construct a maximally consistent set of propositions, not just in principle but in practice. But, again, no one can ever meet this requirement; so ideal positive primary conceivability can’t provide us with a guide to possibility.⁴⁰

Before moving on, some clarifications are necessary. Firstly, it should be noted that in Chalmers’ theory, conceivability is linked to statements or propositions. Indeed, when we say that what a sentence *s* describes is conceivable, we actually refer to a situation — the situation that *s* describes. But note that what we speak of is the situation under the description *s*. We are not talking about the situation under other descriptions, or a “bare” situation, which is associated with no descriptions. For example, when we say, “it is conceivable that Donald Trump is bald”, we are saying that the situation which is associated with the description “Donald Trump is bald” is conceivable, we are not saying that the situation which is associated with the description “the 45th President of the United States is bald” is conceivable, although the sentence “Donald Trump is bald” and the sentence “the 45th President of the United States is bald” describe the same situation.

Moreover, as I have addressed in Chapter 2, the 2-conceivability of a statement

⁴⁰ Hanrahan (2009), p. 285.

cannot always be acquired in an a priori way. This is why 1-conceivability, which is the conceivability of a statement's primary intension, is Chalmers' central concern. Hanrahan is aware of these two points. She writes: "this kind of conceivability (in discussion) is primary conceivability, or conceivability according to the primary intensions of the terms used in describing *S*."⁴¹ In view of this, when it comes to the conceivability of *S* in her paper, we should read it as meaning the 1-conceivability of the description of *S*.

Secondly, the kind of conceivability in Hanrahan's discussion is ideal conceivability, which is irrelevant to what an agent can "positively conceive of".⁴² By definition, an agent *A* can conceive of what *S* describes iff for *A*, it is *prima facie* conceivable that *S*. However, as Chalmers points out, *prima facie* conceivability does not entail possibility. Moreover, it is obvious that Hanrahan does not aim to argue against the claim that *prima facie* is a guide to possibility. Thus, she would miss her target if what is in discussion is what she can "positively conceive of". To avoid this problem, I think we should read "I positively conceive of *S*" as meaning "I claim that *S* is ideally positively conceivable".⁴³

Third, Hanrahan is aware that "Chalmers is quite explicit that ideal conceivability doesn't involve our describing a whole (logically possible) world".⁴⁴ In Chalmers' theory, logically possible worlds are identified with "equivalence classes of qualitatively complete descriptions".⁴⁵ In other words, logically possible worlds are identified with maximal consistent sets. Plus, Chalmers admits that "when *S* is ideally positively conceivable, it must be possible *in principle* to flesh out any missing details of an imagined situation that verifies *S*".⁴⁶ But if we were required to construct a maximal consistent set in order to know what is ideally conceivable, that would be too demanding a requirement to be met. In this case, we would never know what is ideally conceivable. Moreover, "any epistemology that requires us to do what we in fact can't do isn't to be considered an epistemology".⁴⁷ So if we were required to provide a qualitatively complete description of a logically possible world in order to know what is ideally positively conceivable, the CP+ thesis would not be qualified

⁴¹ Hanrahan (2009), p. 283.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Hanrahan (2009), p. 284.

⁴⁵ Chalmers (2002), p. 193.

⁴⁶ Chalmers (2002), p. 153.

⁴⁷ Hanrahan (2009), p. 284.

to be an epistemology of modality.

Chalmers has noticed this potential problem. He never says that in order to make a conceivability judgment we are required to construct a maximal consistent set *in practice*. Rather, he says:

In practice, to make a conceivability judgment, one need only consider a conceivable situation — a small part of a world — and then make sure that one is describing it correctly. If there is a conceivable *situation* in which a statement is true, there will obviously be a conceivable *world* in which the statement is true, so this method will give reasonable results while straining our cognitive resources less than conceiving of an entire world!⁴⁸

To rephrase, to show that it is ideally positively conceivable that p , one just has to find another coherent proposition q such that q entails p , or construct a consistent set of propositions Γ such that Γ contains a finite number of propositions and Γ entails p . According to Chalmers, if there is such a q or Γ , “there will obviously be a conceivable world”, i.e., a maximal consistent set in which p is true.⁴⁹ Consider Chalmers’ definition of ideal positive conceivability again:

(IPC) For a proposition p , it is ideally positively conceivable that p iff there is a consistent set of propositions, Γ , such that Γ verifies (or entails) p .

According to this definition, in order to show that p is ideally positively conceivable, we are only required to construct a consistent set, rather than a maximal consistent set.

So both Chalmers and Hanrahan admit that making a conceivability judgment does not require that we construct a maximal consistent set. But why is the modal skeptic justified in asking one about the details of the situation one has intuited? The reason is probably as follows: According to the definition of IPC, in order to establish that it is ideally positively conceivable that p , one needs to construct a consistent set that entails p . We can name this set Γ_I . To construct a set that entails p is not difficult. In order to do so, we can even simply take p itself, and conjoin p with further propositions necessary.

But how can we demonstrate that Γ_I is consistent? Since ideal positive

⁴⁸ Chalmers (1996), p. 67.

⁴⁹ Ibid.

conceivability and logical possibility are equivalent, one way to show that Γ_1 is consistent (that is, logically possible) is to show that the conjunction of all the members of Γ_1 is ideally conceivable. In order to do so, we have to resort to another consistent set of propositions, Γ_2 , which entails every member of Γ_1 and which is itself consistent. (We can say more about this step: Saying that Γ_1 is consistent is to say that the conjunction of all of its members, which I call p_1 , is contradiction-free, i.e., logically possible. Since ideal positive conceivability and logical possibility are equivalent, saying that p_1 is logically possible is to say that p_1 is ideally positively conceivable. In order to show that p_1 is ideally positively conceivable, by definition, we have to resort to a consistent set of propositions that entails p_1 . This is why we need Γ_2 .) How, then, can we construct Γ_2 ? Again, we can take all the members of Γ_1 , and conjoin them with other propositions that are necessary. However, the same problem occurs once more: How can we demonstrate that Γ_2 is consistent? In order to do this, we have to appeal to another set of proposition, Γ_3 , and will face a regress.

Put differently, for each Γ_n , in order to demonstrate that Γ_n is consistent, we have to appeal to the ideal positive conceivability of Γ_n (or to be more accurate, we have to appeal to the ideal positive conceivability of the conjunction of all members of Γ_n). Then, in order to show that the conjunction of all members of Γ_n is ideally positively conceivable, we need another set, Γ_{n+1} , where Γ_{n+1} entails each member of Γ_n . In order to construct Γ_{n+1} , we can take all members of Γ_n and add further propositions. If p is not contradiction-free, then this regress might end at somewhere when a contradiction reveals itself. But if p is contradiction-free, the regress will not end until we construct a maximal consistent set. However, no one can entertain all the members of a maximal consistent set. As a result, it can never be justified that p is ideally positively possible. In this case, ideal positive conceivability cannot provide us with an epistemic guide to what is metaphysically possible. Therefore, CP+ cannot be considered a modal epistemology.

Hanrahan depicts a finite regress that ends at a point that we cannot reach. I think it is the following three premises that are implicitly presupposed by her that lead to the regress:

1. To demonstrate that it is ideally conceivable that p requires that we construct a consistent set of propositions, Γ_1 , such that Γ_1 entails p .
2. To construct a set of propositions, Γ_1 , such that Γ_1 entails p , requires that p

be a member of Γ_1 . Moreover, for any Γ_n ($n \geq 1$), to construct a set of propositions, Γ_{n+1} , such that Γ_{n+1} entails each member of Γ_n requires that Γ_n be a subset of Γ_{n+1} .

3. For any set Γ_n ($n \geq 1$), the only way to demonstrate that Γ_n is consistent is to demonstrate that the conjunction of all of its members is ideally positively conceivable.

But is what is described in Premise 2 the only model for constructing a set of propositions that entails p and for constructing any set Γ_{n+1} that entails each member of Γ_n ? Can the regress be avoided by appealing to another model? As to the first question, the answer is “no”. We can construct a set of propositions that entails p without postulating p as a member of this set. For example, the proposition “if it is raining, I will take an umbrella” is the logical consequence of the proposition “I will take an umbrella”. Thus, the set {I will take an umbrella}, which contains the proposition “I will take an umbrella” as its only member, entails the proposition “if it is raining, I will take an umbrella” without containing the latter as its member.

Similarly, we can construct two sets of propositions such that one of them entails each member of the other without containing the latter as a subset. Let Δ_1 be a set that contains two propositions as its members: “ $2+2=4$ ” and “I will take an umbrella”. Let Δ_2 be a set whose members are two propositions: “ $2+2=4$ ” and “if it is raining, I will take an umbrella”. Every member of Δ_2 is a logical consequence of Δ_1 , but Δ_2 is not a subset of Δ_1 .

As can be seen, to construct a set that entail p does not require that p be a member of this set. To construct a set Γ_{n+1} that entails each member of Γ_n does not require that Γ_{n+1} contain Γ_n as a subset, either. Now we can consider whether the regress can be avoided if we keep Premise 1 and 3 but we replace Premise 2 with Premise 2’:

- 2’. To construct a set of propositions, Γ_1 , such that Γ_1 entails p , requires that p not be a member of Γ_1 . Moreover, for any Γ_n ($n \geq 1$), to construct a set of propositions, Γ_{n+1} , such that Γ_{n+1} entails each member of Γ_n requires that Γ_n not be a subset of Γ_{n+1} .

1.2 Bailey’s Argument

Bailey's argument has 2' as its premise. According to Bailey, the regress will not be eliminated, either. Moreover, the regress in Bailey's model is an infinite one. In the following, I quote his argument:

For some contested modal conclusion p to be justified, an argument from conceivability A must be established as sound; but argument A can only be shown to be sound by another argument from conceivability, B. Since B is also an argument from conceivability, it in turn can only be established by argument from conceivability C, and so on in an infinite regress. This regress is vicious since p is not justified unless all the premises of A are, but all the premises of A are not justified unless all the premises of B are, and so on: since the regress is infinite, the justification of p is never — even partially — achieved.⁵⁰

Bailey's argument can be reconstructed as follows:

1. To demonstrate that it is ideally conceivable that p requires that we construct a consistent set of propositions, Γ_1 , such that Γ_1 entails p .
- 2'. To construct a set of propositions, Γ_1 , such that Γ_1 entails p , requires that p not be a member of Γ_1 . Moreover, for any Γ_n ($n \geq 1$), to construct Γ_{n+1} such that Γ_{n+1} entails each member of Γ_n requires that Γ_n not be a subset of Γ_{n+1} .
3. For any set Γ_n ($n \geq 1$), the only way to demonstrate that Γ_n is consistent is to demonstrate that the conjunction of all of its members is ideally positively conceivable.

The rationale of the above argument is similar to that of Hanrahan's: To show that it is ideally positively conceivable that p requires an argument for the consistence of Γ_1 such that Γ_1 entails p . Since logical possibility and ideal positive conceivability are equivalent, to show that Γ_1 is consistent is to show that the conjunction of all members of Γ_1 is ideally positively conceivable. In order to show that the conjunction of all members of Γ_1 is ideally positively conceivable, we need a further consistent set, Γ_2 . Then, in order to show that Γ_2 is consistent, we have to appeal to a new set, Γ_3 , and so on. Note that according to Bailey's argument, Γ_1 does not contain p as a member. Moreover, any set Γ_{n+1} does not contain Γ_n as a subset. So any set Γ_n cannot be a maximal set because some propositions are logical consequences of it without being

⁵⁰ Bailey (2007), p. 6.

members of it. This is why Bailey's conclusion is different from that of Hanrahan's argument. According to Hanrahan, the regress ends when Γ_n is a maximal consistent set. But in Bailey's view, since any set Γ_n is not a maximal consistent set, the regress is infinite.

1.3 A "Hybrid" Version of the Regress Argument

Furthermore, we can create a hybrid version of these two models of regress if we construct sets of propositions according to the rule laid down in Premise 2'' (see below). Thus, a "hybrid" version of regress argument can be constructed as follows:

1. To demonstrate that it is ideally conceivable that p requires that we construct a consistent set of propositions, Γ_1 , such that Γ_1 entails p .
- 2''. To construct a set of propositions, Γ_1 , such that Γ_1 entails p , does not require that p be or not be a member of Γ_1 . Moreover, for any Γ_n ($n \geq 1$), to construct Γ_{n+1} such that Γ_{n+1} entails each member of Γ_n does not require that Γ_n be or not be a subset of Γ_{n+1} .
3. For any set Γ_n ($n \geq 1$), the only way to demonstrate that Γ_n is consistent is to demonstrate that the conjunction of all of its members is ideally positively conceivable.

According to Premise 2'', p may or may not be a member of Γ_1 . And for any Γ_{n+1} , Γ_n may or may not be a subset of Γ_{n+1} . In this case, to show that p is ideally positively conceivable, we are required to construct a maximal consistent set, or we face an infinite regress. But the problem does not simply disappear: In either case, the claim that it is ideally positively conceivable that p cannot be justified. That is to say, the way in which we construct sets of propositions is not essential to the problem. It is Premise 1 and 3 that lead to the regress. In the following, I consider whether Premise 1 and 3 hold true.

1.4 Why the Regress Arguments Fail

Premise 1 is arguably true. One may argue that the requirement given in Premise 1 is more demanding than it should be. According to the definition of IPC, that it is ideally positively conceivable that p merely requires that *there be* a consistent set that entails p . It follows that in order to show that it is ideally positively conceivable that p ,

we are merely required to provide a reason for the existence of such a set. In other words, according to this view, we do not have to specify which propositions are contained in this set. But is there a way to demonstrate that there is a set that entails p without specifying any member of the set? I am not sure. But I think it may be very difficult to do so.

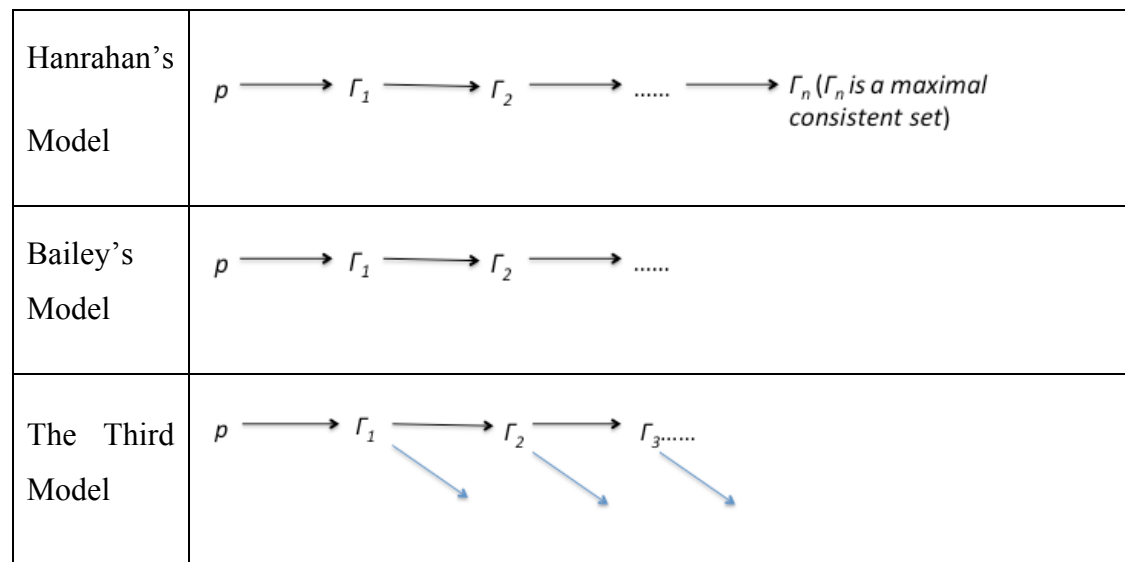
One may argue further that in order to establish that p is ideally positively conceivable, we just need to show that p is not a priori ruled out (i.e., that p is ideally negatively conceivable). This is a legitimate step because IPC and INC are equivalent to one another as well as to logical possibility. If we appeal to the ideal negative conceivability of p , we do not have to construct a set Γ_I that entails p . Thus, we do not have to demonstrate the consistency of Γ_I . Therefore, the regress can be avoided at the very beginning. However, if in order to show that p is ideally positively conceivable, we are merely required to show that p is ideally negatively conceivable, then IPC will conflate with INC, from which it follows that IPC is redundant in Chalmers' theory. So I think we had better not adopt this strategy but instead take what Premise 1 gives as a plausible requirement: To establish that p is ideally positively conceivable, we have to construct a set that entails p and demonstrate that this set is consistent.

As to Premise 3, I do not think that it holds. And what is worse, I think it is this very premise that creates the regress. Indeed, as has been mentioned, to show that p is ideally positively conceivable requires that we construct a consistent set of propositions. But in order to show that the set is consistent, do we have to construct a new set? I do not think so. For any set Γ_n , saying that Γ_n is consistent is saying that the conjunction of all its members is logically possible. (Let us name the conjunction p_n .) How, then, can we show that p_n is logically possible? Hanrahan and Bailey implicitly presuppose that there is only one way: In order to show that p_n is logically possible, we have to demonstrate that it is ideally positively possible that p_n (because IPC and logical possibility are equivalent). This is why they hold that we have to appeal to a new set Γ_{n+1} , and why the regress occurs. But they lose sight of the fact that there is another way to prove the logical possibility of the proposition p_n : that is to show that p_n is ideally negatively conceivable. To say that p_n is ideally negatively conceivable is to say that p_n is not ruled out a priori. In order to show that p_n is not ruled out a priori, we do not have to invoke a new proposition, let alone a set of propositions. Thus, the regress can be avoided.

In the following, I provide an example to show how a regress arises and how it can be avoided. Consider how we can demonstrate that the proposition “if it is raining, I will take an umbrella” is ideally positively conceivable. Firstly, we should provide a consistent set of propositions that entails it, say, the set {I will take an umbrella}. Then, how can we prove the consistency of this set? Since to say a set is consistent is to say that the conjunction of all its members is logically possible, and logical possibility is equivalent to INC and IPC, there are two ways to prove the consistency of this set: One way is to demonstrate that the proposition “I will take an umbrella” is ideally positively conceivable; the other way is to demonstrate that the proposition “I will take an umbrella” is ideally negatively conceivable. If we decide for the first option, we have to resort to another set of propositions that entails the proposition “I will take an umbrella”. Thus, a regress arises. But if we decide for the second option, we can show the consistency of the proposition “I will take an umbrella” without invoking a further set. In this case, we can avoid a regress.

The following diagram shows the difference between the three models of how to demonstrate that p is ideally positively conceivable:

Diagram 1



The rightward arrows indicate that for any Γ_n ($n \geq 1$), if we demonstrate the consistency of Γ_n by appealing to the ideal positive conceivability of p_n (which is the conjunction of all members of Γ_n), then another set, Γ_{n+1} , will be required and a regress (finite or infinite) will arise. The downward arrows indicate that for any Γ_n (n

≥ 1), if we demonstrate the consistency of Γ_n by appealing to the ideal negative conceivability of p_n , no new set will be required and, accordingly, no regress will occur.

2. Hanrahan's Criticism of Ideal Negative Conceivability

In section 1, I have argued that if we demonstrate the consistency of a set of propositions by appealing to ideal negative conceivability, the regress with regard to ideal positive conceivability will end. In this case, the question we have to answer next is this: Can we know or have evidence for whether a proposition is ideally negatively conceivable? Hanrahan claims that we cannot. She says:

It might be that to establish that S is ideally negatively conceivable, one needs to consider both the proposition that describes S and those propositions that are implied by this description, and determine (via rational reflection) that no contradiction is contained within this set of propositions (subset S)... But,...there are an infinite number of propositions implied by any one proposition and we can't ever consider each and every one of them. Thus, we won't be able to establish that there isn't a contradiction amongst these propositions, which means we won't be justified in concluding that S is possible.⁵¹

In her argument, Hanrahan presupposes the following premise:

4. For any proposition p , to demonstrate that p is ideally negatively conceivable (i.e., to demonstrate that p is not ruled out a priori) requires that we examine all the logical consequences of p .

However, for some propositions, we can know that they are not ruled out a priori without examining all their logical consequences. For example, we know the proposition "Donald Trump is bald" is not ruled out a priori because we know that the truth-value of this proposition is knowable a posteriori (even if we do not know whether it is true). We also know that "Donald Trump is the 45th president of the US" and " $2+2=4$ " are not ruled out a priori because we know that they are true (We know that the former proposition is a posteriori true and the latter is a priori true). In all

⁵¹ Hanrahan (2009), p. 287.

these cases, to establish that a given proposition is ideally negatively conceivable, we do not have to examine any logical consequences it might have. So Hanrahan sees a problem where there actually is none.

In sum, according to their regress arguments, Hanrahan and Bailey conclude that (a) holds.

- (a) For *any* proposition p , we cannot know or have evidence for whether it is ideally positively conceivable that p .

However, as I have argued, their arguments presuppose that there is only one way to demonstrate the consistency of a set, i.e., by examining whether the conjunction of all of its members is ideally positively conceivable, which is a false premise. If we turn to ideal negative conceivability, the regress with regard to ideal positive conceivability will not arise. But Hanrahan goes on to defend the following claim:

- (b) For *any* proposition p , we cannot know or have evidence for whether it is ideally negatively conceivable that p .

I have also argued that Hanrahan's argument for (b) presupposes a false premise. So Hanrahan's second argument collapses, too. Since (b) is false, (a) is false. Thus, based on the discussion in Section 1 and 2, we can claim that (c) is true.

- (c) For *some* proposition p , we *can* know or have evidence for whether it is ideally conceivable that p .

In what follows, I discuss Worley's criticism, which claims that (d) holds.

- (d) For *some* proposition p , we *cannot* know or have evidence for whether it is ideally conceivable that p .

3. Worley's Criticism

In her paper *Conceivability, Possibility and Physicalism*, Worley argues that we are not able to detect all incoherent descriptions of a situation. She concludes by saying that we cannot always tell whether a situation is ideally conceivable, and therefore cannot always tell whether a situation is possible. She says:

Although a situation is impossible only if there is some description which reveals

its incoherence, we need not be aware of this description. Some situation may seem conceivable to us because the description or mode of presentation under which we are thinking of it is not sufficient to reveal its incoherence, even though there is some other description available, in principle, which does reveal its incoherence. Even if, in short, conceivability is not relativized to our epistemic status, our judgments about what is conceivable must necessarily be relativized to that status. So our judgments about what is conceivable may not be reliable indicators of what actually is conceivable... [In this case], surely the most we can say now is that it seems to us that it (the situation in question) is conceivable, or, perhaps, that we simply cannot tell whether or not it is conceivable.⁵²

Here I list all of her premises:

5. By definition, ideal conceivability is equivalent to logical possibility.
6. A situation is logically possible iff all descriptions of it are logically possible.
7. A single situation may be associated with more than one description.
8. If one description of a situation is incoherent, then the situation is incoherent.
9. We may not be aware of some incoherent descriptions.

From Premises 5-9, she concludes that there are some situations such that we cannot know or have evidence for whether they are ideally conceivable. In the following, I explain her premises in turn. Premise 5 holds. As has been said, there are two ways to define logical possibility: One way is to define it in terms of what is not ruled out a priori, the other is to define it in terms of what is contained in a maximal consistent set. These two ways are also how Chalmers defines ideal conceivability. As a result, saying that it is ideally conceivable that *p* is saying that it is logically possible that *p*.

In fact, Chalmers takes conceivability as a property of statements or propositions and confines his discussion to the conceivability of the primary intension (which is a proposition) of any statement. By contrast, what Worley considers is the conceivability (that is, logical possibility) of situations. Moreover, according to Worley, the notion of coherency, i.e., logical possibility, merely applies to

⁵² Worley (2003), pp. 19-20.

descriptions but not to situations. Plus, in her view, the most plausible way to interpret the claim that a situation is logically possible is to read it as meaning that the description(s) of a situation is logically possible. This is why she presupposes Premise 6.

But a problem arises: A single situation may be associated with more than one description (Premise 7). What if some descriptions are coherent but the others are not? Is this situation logically possible in virtue of its coherent descriptions or logically impossible in virtue of its incoherent descriptions? Consider this situation as an example: The great philosopher, Kant, who is a bachelor, is not male. Let us name this situation *S*. There are at least two ways to describe *S*:

- (i) The great philosopher is not male.
- (ii) The bachelor who was born in Königsberg on April 22nd, 1724, is not male.

(i) and (ii) are both descriptions of the same situation *S*. (i) is coherent but (ii) is not. Then we can consider this question: Is *S* coherent in virtue of (i) or incoherent in virtue of (ii)? According to Worley, “the existence of at least one incoherent description of a situation is enough to show that situation is (logically) impossible”.⁵³ (Premise 8) Since (ii) involves a contradiction, Worley would say that the incoherent description (ii) is enough to show that *S* is logically impossible.

So far, I think Premises 6-8 are all true. However, the problem is that they involve a misunderstanding of Chalmers’ program. According to Chalmers, when we try to determine whether a situation is conceivable, our reasoning does not proceed along the following lines: We first find out all the descriptions of a situation, and then examine whether any of these descriptions are contradictory. In Chalmers’ theory, conceivability and possibility are linked to statements or propositions, but not to situations. In other words, the domain of the CP thesis is statements or propositions, not situations.

So for Chalmers, we only need to consider whether what a statement or a proposition says is ideally conceivable. Our reasoning concerning conceivability proceeds along the following lines: For each statement in question, we first find out what its primary intension is. We then examine whether its primary intension, which

⁵³ Worley (2003), p. 18.

is a proposition, involves any contradictions. Indeed, Chalmers himself talks about the conceivability of situations occasionally. But the situations that he talks about are associated with specific descriptions, rather than “bare” situations. So when it comes to the conceivability of a situation, he actually speaks of the logical possibility of a certain description of this situation. It is not his concern whether there are other descriptions of a situation or whether these descriptions are logically possible. Due to this, Premises 6-8 are irrelevant to Chalmers’ theory.

Premise 9 says that we are not always aware of the incoherent description(s) of a situation. Indeed, sometimes a situation may seem logically possible to us without actually being so. In the case of Kant, we may conclude that *S* is logically possible because we are not aware of description (ii), which is incoherent. For this reason, Worley claims that our judgments about what is logically possible are not a reliable guide to what is actually logically possible.

But I think we can read Premise 9 in two ways. Firstly, we can read it as meaning 9’:

- (9’) For a given situation, we may not be aware of some of its descriptions, which may or may not be coherent.

However, as has been addressed, the mere fact that we are not aware of some descriptions does not pose any problems to Chalmers’ program. What concerns him is the logical possibility of a statement or proposition, or a situation associated with a specific description. The logical possibility of a “bare” situation is not his concern.

Secondly, we can read Premise 9 as meaning 9’’::

- (9’’) For some descriptions, we may not know or have evidence for whether they are incoherent.

I think 9’’ is a plausible premise and what it says poses a real problem to Chalmers’ theory. Due to our cognitive limitations, we cannot always detect the contradiction(s) involved in a given proposition if there is one. If we cannot detect a contradiction(s), in other words, if we cannot rule out the proposition a priori, then the most we can say is that it is *prima facie* conceivable for us that *p* (Recall the definition of *prima facie* negative conceivability). Perhaps, arguably, we can say further that we know or have evidence that it is *prima facie* conceivable that *p*. However, the fact that we cannot detect a contradiction in *p* does not entail that *p* is contradiction-free. In other words,

what is *prima facie* conceivable for us is not a guide to what is ideally conceivable. We cannot, therefore, take the evidence of what is *prima facie* conceivable as evidence for what is ideally conceivable.

Based on Premise 5 and 9'', we can draw the following conclusion:

- (d) For *some* proposition *p*, we *cannot* know or have evidence for whether it is ideally conceivable that *p*.⁵⁴

To illustrate (d), Worley takes the case of the Goldbach Conjecture (GC) as an example. She says: "Although an equivalent of a Laplacean demon for mathematics would indeed see that worlds in which Goldbach's conjecture is false are necessarily incoherent, we are not such Laplacean demon."⁵⁵ Since we cannot a priori detect the incoherence of \neg GC, \neg GC is *prima facie* conceivable for us. But we should not take its *prima facie* conceivability as a guide to its ideal conceivability. In this case, the most we can say is that we simply do not know whether \neg GC is ideally conceivable. We cannot say that \neg GC is ideally conceivable or that we know or have evidence that \neg GC is ideally conceivable.

Furthermore, Worley draws an analogy between the case of GC and the zombie example and draws a further conclusion very quickly: Just as we cannot determine whether \neg GC is ideally conceivable, whether or not the existence of zombies is ideally conceivable is not clear, either. She says:

And given that we are not Laplacean demons, it's unclear why we should trust our intuitions with respect to the conceivability of zombies anymore than we should trust our intuitions with respect to any such question about what the physical entails, or about which mathematical propositions are true.⁵⁶

However, (d) merely states that we cannot know or have evidence of the ideal conceivability of *some* propositions, but it does not tell us the ideal conceivability of *which* propositions cannot be known or justified. Without further specification as to when we cannot know or have evidence of the conceivability of a proposition, we cannot conclude that we cannot know or have evidence that the existence of zombies is ideally conceivable.

⁵⁴ This is also Worley's conclusion. The difference is that she draws this conclusion from Premises 5-9. But as I have argued, Premises 6-8 are irrelevant to Chalmers' theory. Moreover, Premise 9 should be read as 9'.)

⁵⁵ Worley (2003), pp. 20-21.

⁵⁶ Worley (2003), p. 21.

In the remainder of this chapter, I argue for the following three claims (e)-(f), which indicate in which cases we cannot know or have evidence for the ideal conceivability of a proposition. I will return to the case of the zombies in Chapter 5.

First, let us consider (e):

- (e) If the truth-value of p is a priori knowable, then we cannot know or have evidence for whether p is ideally conceivable without knowing or having evidence of its truth-value.

If the truth-value of p is a priori knowable, according to the definition of ideal negative conceivability (INC), it is ideally negatively conceivable that p iff p is true. In other words, between p and $\neg p$, only one is ideally negatively conceivable, but the other is not. Assume that we can tell the one that is ideally negatively conceivable from the one that is not. Assume further that we know or have evidence that p is ideally negatively conceivable. It follows that we take $\neg p$ as the inconceivable one. In other words, it follows that we have knowledge or evidence that $\neg p$ is a priori false, that is to say we have knowledge or evidence that p is a priori true. On the other hand, if we know or have evidence that p is ideally negatively inconceivable, it follows that we know or have evidence that p is a priori false. Thus, if the truth-value of p is a priori knowable, then to know or have evidence for whether p is ideally negatively conceivable requires that we know or have evidence of p 's truth-value. It follows that without knowing or having evidence of p 's truth-value, we cannot know or have evidence for whether p is ideally negatively conceivable.

Moreover, by definition, INC and IPC (ideal positive conceivability), both of which are defined in terms of logical possibility, are equivalent. Thus, without knowing or having evidence for whether p is true, we cannot know or have evidence for whether p is ideally positively conceivable, either.

Let us now consider (f):

- (f) If p is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false, then we cannot know or have evidence for whether p is ideally conceivable without knowing or having evidence of its truth-value.

As has been shown in Chapter 2, if the CP thesis holds, then any necessary proposition (that is, any proposition whose possible truth entails its truth and whose

possible falsehood entails its falsehood) has to be either a priori true or a priori false. So if (e) holds, (f) is true.

Finally, let us consider (g):

- (g) If p is a proposition such that we know that p is false but do not know or have evidence for whether the truth-value of p is a posteriori knowable, then we cannot know or have evidence for whether p is ideally conceivable.

According to the definition of INC, p is ideally negatively conceivable iff p is not a priori false. In other words, p is ideally negatively conceivable iff p is a priori true or p 's truth-value is a posteriori knowable. If we know that p is false, p is ideally negatively conceivable iff p is a posteriori false. So we cannot know or have evidence for whether p is ideally negatively conceivable without knowing or having evidence for whether the truth-value of p is a posteriori knowable. Since INC and IPC are equivalent, in this case, we cannot know or have evidence whether p is ideally positively conceivable, either.

(e)-(g) will be used in the discussion of the following chapters.

Chapter 4: Is the CP Thesis Self-Defeating?

In Chapter 3, I have argued that if p is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false, then we cannot know or have evidence for whether p is ideally conceivable without knowing or having evidence of p 's truth-value. In this case, ideal conceivability cannot provide us with a guide to possibility. The CP thesis, which says that ideal conceivability entails possibility, is itself a proposition such that its possible truth entails its truth and its possible falsity entails its falsity. In this chapter, I argue that we cannot know or have evidence for whether the CP thesis is possibly false (and therefore false) by appealing to a conceivability argument. This is due to the lack of knowledge or evidence for whether the falsity (or necessary falsity) of CP is ideally conceivable. My discussion in this chapter is based on the arguments in Howell (2008) and Mizrahi & Morrow (2015).

Chalmers establishes the CP thesis on the grounds that the counterexamples of Kripkean a posteriori necessities can be explained away within the framework of 2-D semantics. In other words, if Chalmers is right, then it is not easy to find a counterexample to CP anymore. As Howell puts it:

The very statement of two-dimensionalism provides a recipe for creating one sort of counterexample: find a sentence that expresses a coherent scenario that does not have a primary intension that is true in any possible world. It is difficult to do this without begging any questions, so metaphysical two-dimensionalism can seem a safe bet.⁵⁷

However, some philosophers nevertheless regard the CP thesis as too strong to be true. According to Howell, there is an “overlooked strategy for developing a counterexample to metaphysical two-dimensionalism: find a sentence that expresses a coherent scenario, but that entails the falsity of metaphysical two-dimensionalism if either the primary intension or the secondary intension of the sentence is true in any metaphysically possible world.”⁵⁸ It is this strategy that Howell (2008) and Mizrahi & Morrow (2015) adopt to attack CP. They construct several *reductio* arguments, each of which begins with a *conceivability premise*, which says that it is conceivable that CP fails (or that it is conceivable that CP fails necessarily). By the same CP thesis,

⁵⁷ Howell (2008), p. 351.

⁵⁸ Ibid.

one can infer that it is possible that CP fails (or that it is possible that CP fails necessarily), from which it follows that CP fails. In other words, the CP thesis is proven to be self-defeating if any of these arguments are sound. In this chapter, I aim to examine these arguments. In my view, the problem with them is that their conceivability premises are not justified. I propose two possible ways in which one can provide a reason for these conceivability premises. However, I argue further that a move in either direction would render the *reductio* arguments themselves redundant.

1. Howell's Argument Against CP

In his paper *The Two-Dimensionalist Reductio*, Howell argues against the idea that conceivability entails possibility. His original argument is presented as below:

Argument 1

1. If metaphysical two-dimensionalism is true, the conceivability₁ of a statement's truth entails its possibility₁.
2. SN is conceivable₁.
3. If metaphysical two-dimensionalism is true, SN is possible₁.
4. If SN's primary and secondary intensions coincide, SN's being possible₁ entails that SN is possible₂.
5. SN's primary and secondary intensions coincide.
6. If SN is possible₂, SN is true.
7. If SN is true, metaphysical two-dimensionalism is false.
8. If metaphysical two-dimensionalism is true, it is false.⁵⁹

Before moving on, a few of the moves in the argument, as well as the terminology Howell uses, need to be clarified. Firstly, the notation used by Howell is different from that used by Chalmers. For example, Chalmers uses "1-conceivability" and "2-conceivability" to refer to primary conceivability and secondary conceivability. Accordingly, "1-possibility" and "2-possibility" respectively stand for primary possibility and secondary possibility. Howell, in his paper, however, uses "conceivability" and "possibility" with a subscript to refer to a particular kind of conceivability and possibility.

Secondly, the key theses involved in Howell's argument and the relations

⁵⁹ Howell (2008), p. 352.

between them require an explanation. The first thesis is metaphysical two-dimensionalism:

(M2D) The space of metaphysically possible worlds is not more limited than the space of conceivable worlds.

The main idea of M2D is very close to that of modal monism, which says that the space of metaphysically possible worlds is not more limited than the space of logically possible worlds (that is, ideally conceivable worlds). The only difference is that the notion of conceivability in the formulation of M2D is not qualified as ideal. I put this point aside and return to it later.

As has been addressed in Chapter 2, Kripkean a posteriori necessities pose a threat to the hypothesis that conceivability and possibility are co-extensive. But if we introduce 2-D semantics, we will find that conceivability and metaphysical possibility merely come apart at the level of statements. At the level of worlds, there are no counterexamples to the hypothesis that the space of conceivable worlds is co-extensive with the space of metaphysically possible worlds.⁶⁰ In other words, within the framework of 2-D semantics, M2D remains intact. If M2D is true, then an entailment between conceivability and possibility can be established:

(CEP) For any proposition p , that it is conceivable that p entails that it is possible that p .

CEP' is an equivalent reformulation of CEP:

(CEP') For any proposition p , necessarily, if it is conceivable that p , then it is possible that p .

Accordingly, the main idea behind CEP and CEP' is very close to that of the CP thesis, which follows from the truth of modal monism. The difference is that conceivability in the formulation of the CP thesis is ideal conceivability, whereas conceivability in the formulation of CEP or CEP' is not qualified as ideal.

SN is the negation of M2D:

(SN) The space of metaphysically possible worlds is more limited than the

⁶⁰ It is worth noting that for Chalmers, only ideal negative conceivability and ideal positive conceivability are identical with possibility. In other words, only every ideally negatively conceivable world or ideally positively conceivable world is a metaphysically possible world. I will elaborate on this point later.

space of conceivable worlds.

From (SN), we can derive the negation of CEP and that of CEP':

(¬CEP) For some proposition p , that it is conceivable that p does not entail that it is possible that p .

(¬CEP') For some proposition p , possibly, it is conceivable that p and that it is not possible that p .

Altogether, the relation between each of these theses is as follows:

(1) M2D, which says that the space of possible worlds is not more limited than that of conceivable worlds, entails the truth of CEP (or CEP'), which says that conceivability entails possibility:

$(\text{M2D}) \rightarrow (\text{CEP}) \text{ (or CEP')}$

(2) SN, which says that the space of possible worlds is more limited than that of conceivable worlds, entails the falsity of CEP (or CEP'):

$(\text{SN}) \rightarrow (\neg\text{CEP}) \text{ (or } \neg\text{CEP}')$

(3) SN is equivalent to the negation of M2D:

$(\text{M2D}) \leftrightarrow (\neg\text{SN})$

From (1), (2) and (3), we can infer that SN is equivalent to the negation of CEP (or the negation of CEP'):

$(\text{SN}) \leftrightarrow (\neg\text{CEP}) \text{ (or } \neg\text{CEP}')$

Thirdly, let us consider why SN's being possibly true entails that it is true. Howell says: "since SN is a statement about the whole of logical space, however, it is a necessary truth if it is a truth at all. But if a necessary truth is true in any possible world, then it is true in all possible worlds and is therefore true in the actual world."⁶¹

However, I think we can expand on this. Howell's statement may be easier to understand if we begin by considering the following question: Is CEP a thesis such that if it is possibly false, then it is false? The answer is "yes". CEP is equivalent to

⁶¹ Howell (2008), p. 352.

CEP'. If we take both the Barcan formula and the converse Barcan formula as plausible:

$$(BF) \quad \forall x \Box Fx \rightarrow \Box \forall x Fx$$

$$(CBF) \quad \Box \forall x Fx \rightarrow \forall x \Box Fx$$

We will conclude that CEP' is equivalent to (CEP'')

(CEP'') Necessarily, for any proposition p , if it is conceivable that p , then it is possible that p .

In S5, $\Diamond \neg \Box p \rightarrow \neg \Box p$ is a theorem. Thus, CEP'', which is a necessity claim, is false if it is possibly false. Given that CEP' and CEP'' are equivalent, that CEP' is possibly false entails that it is false. Given that CEP and CEP' are equivalent, that CEP is possibly false entails that it is false. As a result, since SN is the negation of CEP, that SN is possibly true entails that it is true.

Lastly, the primary intension and the secondary intension of each of the above theses coincide. In the previous chapters, I have shown that some statements have different primary and secondary intensions. For example, the primary intension and the secondary intension of the statement “water = H₂O” come apart, because “which world is actual matters to the evaluation of necessary truths concerning water.”⁶² But unlike in the case of water, which world is actual does not matter to the evaluation of the necessary truths of SN or CEP. Thus, it is valid to infer that SN is 2-possible from the fact that it is 1-conceivable. This explains why Premises 4 and 5 hold. Given that there is no difference between 1-conceivability/possibility and 2-conceivability/possibility in SN or CEP, for the sake of brevity, I use “conceivability” to refer to 1-conceivability and “possibility” to refer to 1-possibility.

Altogether, I think that it is acceptable to replace SN with “that CEP fails” in Howell’s argument and that it will not undermine the idea of his argument if we simplify it as follows:

Argument 2

9. It is conceivable that CEP fails.
10. If CEP holds and it is conceivable that CEP fails, then it is possible that

⁶² Howell (2008), p. 353.

CEP fails.

11. If it is possible that CEP fails, then CEP fails.

Conclusion: If CEP holds, then CEP fails.

Let us consider again what CEP says:

(CEP) For any proposition p , that it is conceivable that p entails that it is possible that p .

It can be seen that in the formulation of CEP, Howell does not distinguish between positive and negative conceivability. Moreover, he refrains from qualifying the notion of conceivability as ideal. Given this, I think that he implicitly introduces another kind of conceivability (other than INC or IPC) and incorporates this kind of conceivability in the formulation of CEP. I call this new kind of conceivability H-conceivability. Put differently, Howell does not intend to rebut CP[−] or CP⁺ but a different conceivability-to-possibility entailment, namely the one from H-conceivability to (metaphysical) possibility. I call this new entailment CP_H. However, at the end of his paper, Howell also considers how Chalmers might respond if the conceivability involved in his argument is qualified as ideal. In view of this, I think that it is reasonable to read his argument in two ways. In the first way, we can read it as an argument against the thesis of CP_H:

(CP_H) For any proposition p , that it is H-conceivable that p entails that it is possible that p .

Accordingly, we should reformulate his argument as follows:

Argument 3

9'. It is H-conceivable that CP_H fails.

10'. If CP_H holds and it is H-conceivable that CP_H fails, then it is possible that CP_H fails.

11'. If it is possible that CP_H fails, then CP_H fails.

Conclusion: If CP_H holds, then CP_H fails.

In the second way, we can read his argument as a rebuttal of CP[−] or CP⁺:

(CP[−]/CP⁺) For any proposition p , that it is ideally (negatively/positively)

conceivable that p entails that it is possible that p .⁶³

Accordingly, the *reductio* argument against CP should be reformulated as follows:

Argument 4

9'': It is ideally conceivable that CP fails.

10'': If CP holds and it is ideally conceivable that CP fails, then it is possible that CP fails.

11'': If it is possible that CP fails, then CP fails.

Conclusion: If CP holds, then CP fails.

I will first examine Argument 3, and then Argument 4.

In Argument 3, Premise 10' is plausible. By applying the general principle that H-conceivability entails possibility, we can infer that the failure of CP_H is possible from the fact that the failure of CP_H is H-conceivable. Premise 11' is true if we presuppose S5. The CP_H thesis, as an entailment, can be read as a necessity claim:

(CP_H') For any proposition p , necessarily, if it is H-conceivable that p , then it is possible that p .

Given that the Barcan formula and the converse Barcan formula hold, CP_H' is equivalent to CP_H'' :

(CP_H'') Necessarily, for any proposition p , if it is H-conceivable that p , then it is possible that p .

In system S5, if a necessity claim is possibly true, then it is true ($\Diamond\Box p \rightarrow \Box p$); if it is possibly false, then it is false ($\Diamond\neg\Box p \rightarrow \neg\Box p$). Hence, in S5, that CP_H'' is possibly false entails that it is false. This conclusion also applies to CP_H , since CP_H and CP_H'' are equivalent. This is why Premise 11' holds. Thus, the soundness of Argument 3 depends highly on Premise 9', which depends, in turn, on how H-conceivability is characterized.

Another reason why it matters how H-conceivability is characterized is because it determines how CP_H is spelled out. In order for a *reductio* argument to play a role in rebutting CP_H , CP_H has to be a thesis that is strong enough to preclude any obvious counterexamples. Otherwise, it is not necessary to argue against CP_H by appealing to

⁶³ For the sake of brevity, I will use "CP" to refer to either CP- or CP+ in the following.

a *reductio* argument. In his paper, Howell tries to convince us that Premise 9' is true by arguing that the failure of CP_H is conceivable in a strong sense. But I think that it is not clear that CP_H , if formulated in terms of this “strong” conceivability, is strong enough to be immune to obvious counterexamples. In the following, I respond his argument by arguing that CP_H is indeed not immune to obvious counterexamples.

Before moving on, I first respond to Howell that it is not tenable to eliminate the qualification of ideal conceivability. Howell does not qualify his conceivability as ideal because he believes that this would lead to a circular definition: “Conceivability is ideal iff it tracks [metaphysical] possibility.”⁶⁴ However, Chalmers is very careful to avoid the danger of circularity. He is aware that the link between conceivability and metaphysical possibility would be trivialized if the reasoning about conceivability were defined even in part as reasoning that tracks metaphysical possibility.⁶⁵ As has been mentioned, there are two ways in which Chalmers defines ideal conceivability. For one thing, ideal conceivability is defined in terms of what is not ruled out a priori. For another, ideal conceivability is defined in terms of what is verified (or entailed) by a consistent set of propositions. In a word, Chalmers defines ideal conceivability by invoking the notions of apriority, coherence and verification, each of which is wholly grounded in rational concepts and does not presuppose metaphysical possibility. Because of this, “we have an entirely independent grounding for the notion [of ideal conceivability]”.⁶⁶ Actually, in either way in which it is defined, ideal conceivability tracks logical possibility rather than metaphysical possibility. Thus, there is no danger of trivializing the link between ideal conceivability and metaphysical possibility.

On the contrary, eliminating the qualification of ideal from the formulation of CP_H may endanger Howell’s own program, because it is contentious whether the conceivability-to-possibility entailment thus formulated is immune to obvious counterexamples. Howell realizes that CP_H will be too weak if H-conceivability is read as *prima facie* conceivability. *p* is *prima facie* conceivable for a subject iff she cannot rule out *p* a priori or iff she can construct a set of propositions that she regards as verifying *p*. According to this definition, both GC (Goldbach’s Conjecture) and

⁶⁴ Howell (2008), p. 354.

⁶⁵ See Chalmers (2002), p. 149.

⁶⁶ Ibid.

¬GC are *prima facie* conceivable for us. However, it cannot be the case that GC is both possibly true and possibly false.

Howell then puts forward another kind of conceivability that he believes to be stronger than *prima facie* conceivability. He claims that it is conceivable in this stronger sense that this stronger kind of conceivability does not entail possibility. In defense of this claim, he invokes two possible scenarios constructed by Loar and McGinn, respectively.

According to Loar, “phenomenal concepts are conceptually independent of physical-functional descriptions”.⁶⁷ They are recognitional concepts, which pick out their referents through a direct process of recognition. Because of this, a phenomenal concept and a microphysical concept may “converge in their reference despite their cognitive independence”.⁶⁸ In other words, we may not know a priori that a phenomenal concept A and a physical concept B are co-extensive, although they are in fact so. Whether Loar is right is not my concern. But by citing Loar, Howell describes a situation in which we cannot realize a priori that the phenomenal concept A co-refers with the physical concept B. An identity claim is necessarily true if it is true. That we cannot know a priori that $A = B$ means that we can negatively conceive that $A \neq B$. Thus, in other words, by citing Loar, Howell actually provides a situation that we can conceive of and in which what we can conceive of (i.e., that $A \neq B$) is necessarily false. That is to say, in the situation Howell describes, what we can conceive of does not entail possibility.

McGinn provides a more radical view. He puts forward the idea of “cognitive closure”: “A type of mind M is cognitively closed with respect to a property P (or theory T) if and only if the concept-forming procedures at M’s disposal cannot extend to a grasp of P (or an understanding of T).”⁶⁹ But whether M can cognitively access P is irrelevant to whether P exists. For example, that we cannot see some invisible part of a thing does not entail that the invisible part does not exist. By the same token, “cognitive closure with respect to P does not imply irrationalism about P. That P is (as we might say) noumenal for M does not show that P does not occur in some naturalistic scientific theory T. It shows only that T is not cognitively accessible to M.”⁷⁰ In view of this, McGinn establishes the following theses: “(i) there exists some property of the

⁶⁷ Loar (1997), p. 602.

⁶⁸ Loar (1990), p. 88.

⁶⁹ McGinn (1989), p. 350.

⁷⁰ McGinn (1989), p. 351.

brain that accounts naturalistically for consciousness; (ii) we are cognitively closed with respect to that property.”⁷¹ If McGinn is right, then it is conceivable that some phenomenal consciousness is not physical, although it is in fact necessarily physical. Whether or not McGinn is right is not relevant, either. But by citing McGinn, Howell describes a situation in which what we can conceive of (i.e., that phenomenal consciousness is not physical) is necessarily false.

In these two situations, “what is possible has no necessary connection to what we can conceive, and our particular access to the facts allows us to conceive of situations that are in fact impossible.”⁷² Moreover, both these situations are something we can conceive of. Put differently, by citing Loar and McGinn, Howell describes two situations that we can *conceive of* and in which what we *conceive of* (i.e., that phenomenal concepts and scientific concepts do not co-refer; that phenomenal consciousness is not physical) is impossible. If this kind of conceivability, which Howell claims stronger than *prima facie* conceivability, can be taken as a candidate for H-conceivability, then indeed, it is H-conceivable that H-conceivability does not entail possibility.

However, as far as I am concerned, the so-called “stronger” conceivability nevertheless depends on our cognitive capabilities and therefore suffers from our cognitive limitations. Due to our cognitive limitations, there is bound to be something that we can conceive of but that is not contradiction-free and that therefore fails to be metaphysically possible. Hence, CP_H is not immune to obvious counterexamples if it is formulated by invoking this “stronger” conceivability. In this case, it is not necessary to resort to a *reductio* argument to refute CP_H. As a result, Howell’s program is threatened.

In order not to render a *reductio* argument redundant, it is probably best if we give up CP_H and turn our attention to CP. In the following, I will turn my discussion to Argument 4:

Argument 4

9’’. It is ideally conceivable that CP fails.

10’’. If CP holds and it is ideally conceivable that CP fails, then it is possible that CP fails.

⁷¹ McGinn (1989), p. 352.

⁷² Howell (2008), p. 353.

11'’. If it is possible that CP fails, then CP fails.

Conclusion: If CP holds, then CP fails.

Since Premise 10’’ and 11’’ are true, and there are no obvious counterexamples to CP, the soundness of this argument hinges on its conceivability premise, i.e., Premise 9’’. Howell imagines several ways how Chalmers might object to this argument and responds to these possible objections in turn. First, according to Howell, to deny the conceivability premise of this argument, Chalmers might claim that “we cannot grasp it enough to form a robust conception of its truth or falsity.”⁷³ In his view, Chalmers might analogize our conception of the falsity of CP to that of the truth of Goldbach’s conjecture (GC), because “in neither case do we really comprehend what it is for these propositions to be true”.⁷⁴ Indeed, if we do not comprehend what it is for a given proposition to be true, then we should not presuppose that there is no contradiction involved in the assertion of this proposition; in other words, we should not presuppose what the proposition says is ideally conceivable. But if Chalmers defended his position by claiming that we do not really understand the conceivability premise, as Howell argues, then Chalmers would only provide a reason not to accept the premise — not, however, give a reason to reject it. In Howell’s view, it is not sufficient to avoid Argument 4 this way.

On this point, I think Howell is mistaken in two respects. To begin with, he assumes that there is a burden of defense on Chalmers’ side that Chalmers does not have. In order to refute the *reductio* argument, Chalmers does not have to provide a reason *against* its conceivability premise since Howell fails to provide a reason *for* this premise. On the contrary, in order to defend his argument, it is Howell’s own burden to vindicate this premise.⁷⁵ Furthermore, even if Howell did provide a reason for his conceivability premise, Chalmers would not have to reject this premise. What he would have to do is to reject the reason that Howell provides.

Additionally, Chalmers does not react as Howell expects him to. In fact, Chalmers never admits that we cannot understand CP, but instead maintains that CP is a priori true. In his paper *The Two-Dimensional Argument Against Materialism*, he

⁷³ Howell (2008), p. 354.

⁷⁴ Ibid.

⁷⁵ I will elaborate on this point later.

claims that he has an a priori argument to show that CP is true, which “involves locating the roots of our modal concepts in the rational domain”.⁷⁶ He writes:

When one looks at the purposes to which modality is put (e.g., in the first chapter of Lewis 1986), it is striking that many of these purposes are tied closely to the rational and the psychological: analyzing the contents of thoughts and the semantics of language, giving an account of counterfactual thought, and analyzing rational inference. It can be argued that for a concept of possibility and necessity to be truly useful in analyzing these domains, it must be a rational modal concept that is tied constitutively to consistency, rational inference, or conceivability.⁷⁷

If this argument is a priori and sound, the failure of CP is ruled out a priori. As a consequence, it is neither ideally negatively nor positively conceivable that CP fails, and therefore, the *reductio* argument can be avoided. As Howell points out, Chalmers’ argument is based on two premises: “1) ‘for a concept of possibility and necessity to be truly useful in analyzing’ the contents of thought, etc., ‘it must be a rational modal concept’ tying conceivability to possibility, and 2) the concept of possibility and necessity that should be used when doing metaphysics is such a concept of possibility and necessity.”⁷⁸ If this argument is an a priori argument, both of its premises have to be a priori true. In other words, the negation of either of its premises should lead to a contradiction. But as Howell points out, Chalmers has not shown any contradiction. If either premise of Chalmers’ a priori argument is denied, what he shows at best is that “the final picture of modal discourse is unlovely”.⁷⁹ Because of this, Howell concludes that Chalmers fails to defend his position.

It is beyond the scope of this chapter to evaluate Chalmers’ a priori argument or Howell’s response. Nevertheless, although Chalmers fails to demonstrate that CP is a priori true, Howell provides no evidence for the claim that CP is *not* a priori true, either. So why should one believe that it is ideally conceivable that CP fails? Once again, Howell seems to assume a burden of proof on Chalmers’ side. I think that it looks like this:

⁷⁶ Chalmers (2010), p. 185.

⁷⁷ Chalmers (2010), p. 185.

⁷⁸ Howell (2008), pp. 355-356.

⁷⁹ Howell (2008), p. 356.

(BP) If one holds that p , then the burden of proof is on one's opponent to show that p is false; otherwise, p should be accepted.

However, I do not think that this principle is reasonable. Say I claim that p is true. Say someone else, whom I call A , questions that claim. Assume further that I fail to provide a reason for accepting p . Plus, A does not provide a reason for rejecting p , either. In this case, according to BP, Howell would say that p should be accepted. However, we can also understand the case the other way around: A claims that p is false. I question this statement. A does not provide a reason for $\neg p$. I cannot provide a reason for rejecting $\neg p$, either. In this case, and by the same BP, Howell has to conclude that p should be denied, too. In other words, BP leads to a contradiction. Thus, it should be abandoned.

As far as I am concerned, if one insists that p is true, it is one's own burden to provide a reason for accepting p , even if one's opponent cannot provide a reason against p . If there is neither sufficient reason for p nor against p , then p remains neither justifiably rejected nor accepted. In this case, it would be premature to conclude either that p should be accepted or that p should be denied. By the same token, not providing any reason to vindicate the conceivability premise, Howell is too hasty in concluding that his conceivability premise is true and that CP should be rejected. I will return to this point and consider how we can defend this premise later.

2. Mizrahi & Morrow's Arguments Against CP

Unlike Howell, Mizrahi & Morrow follow Chalmers' definition of conceivability. They distinguish between negative and positive conceivability, and qualify the relevant concepts as ideal. Moreover, they focus their discussion on IPC and CP+. In their paper *Does Conceivability Entail Metaphysical Possibility?*, they provide two arguments against CP+. I will examine them in turn.

I reconstruct their first argument as below:

Argument 5

12. It is ideally positively conceivable that CP+ is false.
13. If CP+ is true, and if it is ideally positively conceivable that CP+ is false, then it is possible that CP+ is false.

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14. If it is possible that CP+ is false, then it is necessarily possible that CP+ is false. (S5: $\Diamond p \rightarrow \Box \Diamond p$)
 15. If it is necessarily possible that CP+ is false, then ideal positive conceivability is not conclusive evidence for possibility.
 16. If CP+ is true, then ideal positive conceivability is conclusive evidence for possibility.
- Conclusion: If CP+ is true, then ideal positive conceivability is and is not conclusive evidence for possibility. ⁸⁰

Premise 15 and 16 require an explanation. Let us consider Premise 16 first. That “ p entails q ” can be read as meaning that “necessarily, if p is true, then q is true.” “In other words, if p entails q , then p is conclusive evidence for q .”⁸¹ Accordingly, if ideal positive conceivability entails possibility, then the former is conclusive evidence for the latter. However, according to Mizrahi & Morrow, if it is “necessarily possible for ‘it is ideally, positively conceivable that p ’ to be true and for ‘it is possible that p ’ to be false”, this “means that ‘it is ideally, positively conceivable that p ’ is not conclusive evidence for ‘it is possible that p ’”.⁸² This is why Premise 15 holds.

If Premise 15 is true, then the soundness of the argument depends highly on Premise 12: It is ideally positively conceivable that CP+ fails. A common way to show that it is ideally positively conceivable that p is to find another proposition q such that q entails p and q is coherent (i.e., contradiction-free). So in order to vindicate Premise 12, we have to provide a description that is coherent and that entails that CP+ fails. Mizrahi & Morrow resort to “intelligent beings with systematically distorted modal intuitions”.⁸³ Due to their cognitive distortion, these intelligent beings “regard certain kinds of metaphysically impossible states of affairs to be possible, even after ideal rational reflection”.⁸⁴ In other words, for some p that is necessarily false, these intelligent beings can conceive of what p says even after their ideal rational reflection.

Either such an intelligent being is an ideal agent, whose rational reflection cannot be defeated by better reasoning, or it is not. If it is an ideal agent, then what it can conceive of tracks ideal positive conceivability. However, saying that what an ideal

⁸⁰ Mizrahi & Morrow (2015), p. 4.

⁸¹ Mizrahi & Morrow (2015), p. 5.

⁸² Mizrahi & Morrow (2015), pp. 5-6.

⁸³ Mizrahi & Morrow (2015), p. 5.

⁸⁴ Ibid.

agent can conceive of is not possible is equivalent to saying that ideal positive conceivability does not entail possibility. If this is the case, resorting to such an intelligent being cannot provide any justification for Premise 12. On the other hand, if this intelligent being is not an ideal agent, then what it can conceive of does not track ideal positive conceivability. In this case, Premise 12 is not vindicated, either. In other words, whether or not the intelligent being is an ideal agent, appealing to a (non-ideal or ideal) cognitive agent is not a promising way to vindicate the premise that the falsity of CP+ is ideally positively conceivable. Mizrahi & Morrow cannot provide any justification for Premise 12 in this way.

However, Mizrahi & Morrow themselves have expected this objection. They argue that this objection reduces CP+ to a tautology, for it implies that “one has not successfully conceived of a state of affairs unless that state of affairs is genuinely metaphysically possible”.⁸⁵ However, just like Howell, Mizrahi & Morrow misunderstand what ideal conceivability is. Conceivability is qualified as ideal iff it tracks coherency or logical possibility, rather than metaphysical possibility. Thus, we can say that what a proposition says is ideally positively conceivable only if the proposition is genuinely logically possible. So the objection, in fact, does not reduce CP+ to a tautology.

Mizrahi & Morrow’s second *reductio* argument hinges on the premise that CP’s necessary failure is ideally positively conceivable. I reformulate their argument as follows:

Argument 6

17. It is ideally positively conceivable that it is necessary that CP+ fails.
18. If CP+ holds, and if it is ideally positively conceivable that it is necessary that CP+ fails, then it is possible that it is necessary that CP+ fails.
19. If it is possible that it is necessary that CP+ fails, then it is necessary that CP+ fails. (S5: $\Diamond\Box p \rightarrow \Box p$)
20. If it is necessary that CP+ fails, then CP+ fails.

Conclusion: If CP+ holds, then CP+ fails.

To vindicate Premise 17, Mizrahi & Morrow resort to a Spinozistic deity. A Spinozistic deity is a being that makes “everything that happens in its world happen

⁸⁵ Ibid.

necessarily”.⁸⁶ Undoubtedly, this deity makes all propositions that are a posteriori true necessarily true. It follows that some propositions which are logically possible are rendered metaphysically impossible. Thus, the existence of a Spinozistic deity entails that CP+ fails (in the actual world).⁸⁷ Once again, due to its nature of making all truths necessarily true, this Spinozistic deity makes CP+ fail in all possible worlds. That is to say, the existence of this Spinozistic deity entails that CP+ necessarily fails. However, whether the notion of such a deity is coherent remains to be answered.

In addition, one can also construct a *reductio* argument against CP– by appealing to the ideal negative conceivability of the necessary failure of CP–:

Argument 7

21. It is ideally negatively conceivable that it is necessary that CP– fails.
22. If CP– holds, and if it is ideally negatively conceivable that it is necessary that CP– fails, then it is possible that it is necessary that CP– fails.
23. If it is possible that it is necessary that CP– fails, then it is necessary that CP– fails. (S5: $\Diamond\Box p \rightarrow \Box p$)
24. If it is necessary that CP– fails, then CP– fails.

Conclusion: If CP– holds, then CP– fails.

Again, to show that this argument is sound, one has to demonstrate that the necessary failure of CP– is coherent.

Before moving on, I discuss a possible objection that Mizrahi & Morrow mention. They say:

Some might object to our argument by distinguishing between modal claims (e.g., ‘it is possible that *p*’ and ‘necessarily *p*’, where *p* is a non-modal claim) and meta-modal claims (e.g., ‘it is possible that there are no other possible worlds’) and then argue that ‘Weak Modal Rationalism’ applies only to the former, not the latter.⁸⁸ Our modal imaginations, on this view, are like telescopes that allow us to peer into other possible worlds. If we can ‘see’ some state of affairs in some possible world, then there must be some possible world in which that state of affairs exists. But we cannot, on this view, ‘zoom out’ our imaginative

⁸⁶ Mizrahi & Morrow (2015), p. 7.

⁸⁷ Since the existence of a Spinozistic deity entails that CP+ fails, the key premise of Mizrahi & Morrow’s first argument, i.e., Premise 12, can also be justified if the notion of a Spinozistic deity is coherent.

⁸⁸ Weak Modal Rationalism is the CP+ thesis.

telescopes to see the entire panoply of possible worlds at once. Thus, the rationale for treating conceivability as a guide to possibility would not apply to claims about the existence or non-existence of certain possible worlds.⁸⁹

To rephrase, according to Mizrahi & Morrow, the opponents of Argument 6 and 7 may object to them by denying that the CP thesis applies to modal claims. According to them, our imaginations merely allow us to conceive of what happens in the actual world or in *some* possible worlds, but they do not allow us to conceive of what happens in *all* possible worlds. But by introducing a Spinozistic deity, which exists in the actual world, Mizrahi & Morrow respond that we only conceive that such a being (“whose attributes and actions are necessary”) exists in the actual world but do not conceive of what happens in other possible worlds.⁹⁰

I put aside Mizrahi & Morrow response here. As to the objection, I do not think it is reasonable. According to Mizrahi & Morrow, one may claim that CP does not apply to modal claims because we cannot “‘zoom out’ our imaginative telescopes to see the entire panoply of possible worlds at once”.⁹¹ Chalmers himself has similar concerns. He holds that all modal claims should be excluded from the scope of the CP thesis because it is difficult for us to conceive what happens in *all* possible worlds. However, I think that our capacity of imagination has nothing to do with the issue of whether a given proposition is ideally conceivable. To say that a proposition is ideally conceivable is to say that it is logically possible. Why should logical possibility be relevant to our capacity of imagination? So I do not think that a proposition’s being ideally conceivable requires that we can conceive of what it says. To know or have evidence that a proposition is ideally conceivable does not require that we can conceive of what it says, either. In view of this, the claim that the CP thesis does not apply to modal claims does not hold. I will return to this point and address it in more detail in Chapter 5.

3. The Redundancy of the *Reductio* Arguments

In Section 1, I have argued that Howell does not provide a reason for his conceivability premise, which says that it is ideally conceivable that CP fails. Mizrahi & Morrow’s arguments suffer from a similar problem. Their two *reductio* arguments

⁸⁹ Mizrahi & Morrow (2015), p. 8.

⁹⁰ Ibid.

⁹¹ Ibid.

one of which hinges on the claim that the failure of CP+ is ideally positively conceivable and the other of which hinges on the claim that the necessary failure of CP+ is ideally positively conceivable may be justified if the notion of a Spinozistic deity is coherent. However, Mizrahi & Morrow provide no reason for its coherence but rather take it for granted that “a Spinozistic deity is logically possible”.⁹² At the end of Section 2, I construct a *reductio* argument against CP–, which has the same form as Mizrahi & Morrow’s argument against CP+. This argument also calls for a vindication of its conceivability premise. In this section, I will consider how to demonstrate the coherency of the following three claims:

- (a) CP (CP+ or CP–) fails.
- (b) A Spinozistic deity exists.
- (c) It is necessary that CP– fails.

One might suggest that we are justified in believing that *p* is coherent if we cannot detect a contradiction in *p*. However, this is not true. We cannot detect any contradiction in either GC or ¬GC. If the fact that we cannot detect a contradiction in GC implies that we are justified in believing that GC is coherent, then the fact that we cannot detect a contradiction in ¬GC also has to be evidence for the belief that ¬GC is coherent. Thus, we have to accept that we are justified in believing that both GC and ¬GC are coherent. But this conclusion is absurd. Hence, we cannot take the fact that we are unable to detect a contradiction in *p* as evidence for the claim that *p* is coherent. At best, we can say that the fact that we cannot detect a contradiction in *p* merely indicates that we *do not have* a reason to accept that *p* is *incoherent*. It does not indicate that we *have* a reason to accept that *p* is *coherent*. Consequently, proponents of the *reductio* arguments have to appeal to other methods to demonstrate that (a)-(c) are coherent.

Below, I will propose two possible ways to defend the coherency of (a)-(c). These two ways are established in view of the equivalence of coherency and logical possibility: To say that a proposition is coherent is to say that it is logically possible. A proposition is logically possible iff it is not ruled out a priori. Hence, a proposition is coherent if either of the following conditions is met: First, its truth-value is a posteriori knowable (i.e., it is either a posteriori true or a posteriori false); second, it is

⁹² Ibid.

true (either a priori true or a posteriori true). Thus, (a)-(c) will be proved coherent if we can construct an independent argument to show that their truth-values are a posteriori knowable or that they are true.

Presumably, however, the supporters of the *reductio* arguments would not like to do the latter, because the *reductio* arguments would be rendered redundant. Let us consider (a) first. If one has an independent argument that justifies one in believing that (a) is true, then one can claim that CP fails by invoking this new argument. In that case, why should one bother to construct a *reductio* argument? Argument 4, therefore, is redundant. As to (b), since the existence of a Spinozistic deity entails that CP+ fails, then if one can show that a Spinozistic deity exists, one can directly infer that CP+ fails from the fact that the Spinozistic deity exists. In this case, a *reductio* argument against CP+ is not necessary, either. By the same token, if one has another argument with the conclusion that CP– necessarily fails, then one can infer that CP– fails. One does not need to construct a *reductio* argument. Hence, if one can demonstrate that (a)-(c) are true, then no *reductio* arguments is needed anymore.

The *reductio* arguments would also be rendered redundant if one decided for the first way. As I have already addressed in Section 1 of this chapter, if a *reductio* argument can play a role in defeating CP, then there should not be any obvious counterexamples to CP. Counterexamples arise if there is a proposition that is logically possible (i.e., ideally conceivable) but not metaphysically possible. Since saying that *p* is logically possible is to say that *p* is not ruled out a priori, a counterexample arises if there is a proposition that is not a priori false but necessarily false, or if there is a proposition that is not a priori true but necessarily true. In other words, a counterexample arises if there is a proposition that is necessarily true or necessarily false but whose truth-value is a posteriori knowable.⁹³ That a proposition *p* is either necessarily true or necessarily false means that the following thesis holds for this proposition: If it is possible that *p* is true, then it is true; if it is possible that *p* is false, then it is false. So if we can find a proposition such that its truth-value is a posteriori knowable but its possible truth entails its truth and its possible falsity entails its falsity, then we can find a counterexample to CP.

Let us consider (a)-(c) in turn. As has been addressed, the CP thesis, which is an entailment, is true if it is possibly true and false if it is possibly false. So if one can

⁹³ Note the difference between a posteriori necessary propositions and a posteriori necessary statements. The latter do not pose a counterexample to CP but the former do.

show that the truth-value of the proposition “CP fails” is a posteriori knowable, one can find a counterexample to CP. By the same token, the proposition “it is necessary that CP– fails” is also a counterexample if its truth-value is a posteriori knowable. In these two cases, a *reductio* argument is not required.

Let us consider why “a Spinozistic deity exists” is a proposition that is either necessarily true or necessarily false. The rationale goes like this: If such a deity exists in the actual world, it renders itself existent in all possible worlds due to its very nature of making every truth necessarily true. For the same reason, if it exists in any possible world other than the actual world, its existence in that world renders it existent in all possible worlds, including the actual world. So we come to the conclusion that the existence of a Spinozistic deity entails its necessary existence, and its possible existence entails its existence. Put differently, a Spinozistic deity is a being for which it is either necessary to exist or necessary not to exist. Hence, if one can show that the truth-value of the proposition “a Spinozistic deity exists” is a posteriori knowable, then one can rebut CP without invoking a *reductio* argument. Consequently, there is a dilemma for the *reductio* arguments: Either their soundness cannot be justified, or they are redundant.

In the remainder of this chapter, I will explore the reason for the dilemma. One factor that leads to the dilemma is that each of (a)-(c) is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false. For proponents of *reductio* arguments, they can consider this question: Are the truth-values of (a)-(c) a priori knowable or a posteriori knowable? We have good reasons to believe that they would deny that the truth-values of (a)-(c) are a posteriori knowable. In Chapter 2, as has been said, the CP thesis is established on the basis of modal rationalism or modal monism:

(MR_p) For any statement p , p is metaphysically possible iff p is not ruled out a priori.

(MM) The space of logically possible worlds is co-extensive with the space of metaphysically possible worlds.

If one accepts CP, one has to accept that all propositions that are either necessarily true or necessarily false are either a priori true or a priori false. In other words, if one accepts CP, one has to accept that the truth-value of any necessary proposition is

knowable in an a priori way. So the proponents of the *reductio* arguments, who take the CP thesis as their premise, have to accept that the truth-values of (a)-(c) are a priori knowable. If they hold that the truth-values of (a)-(c) are a posteriori knowable for other reasons, they actually reject the CP thesis for the same reasons. In this case, a *reductio* argument is not needed.

So in order not to render a *reductio* argument redundant, the only option for the proponents of those arguments is to accept that the truth-values of (a)-(c) are a priori knowable. But as has been argued in Chapter 3, we cannot know or have evidence for whether a given proposition is ideally conceivable without knowing or having evidence of its truth-value if its truth-value is a priori knowable. A typical example is the case of the Goldbach Conjecture (GC). As an a priori knowable proposition, GC is ideally conceivable iff it is true. Without knowing or having evidence for its truth-value, we cannot know or have evidence for whether it is ideally conceivable. By the same token, if the truth-values of (a)-(c) are a priori knowable, without knowing or having evidence for their truth-values, we are in no position to tell whether they are ideally conceivable. In this case, we cannot provide a justification for the soundness of the *reductio* arguments. As a result, no matter whether the truth-values of (a)-(c) are a posteriori or a priori knowable, it is hopeless to rebut CP by appealing to a *reductio* argument.

Chapter 5: Conceivability Arguments in the Debate of Physicalism Vs. Dualism

In this Chapter, I discuss several conceivability arguments in the debate of physicalism vs. dualism. In Section 1, I outline the main ideas of three versions of physicalism and dualism:

- (1) substance physicalism and substance dualism;
- (2) type physicalism and type dualism;
- (3) minimal physicalism

Moreover, I explain in more detail the modal commitments of these views. In Section 2, I discuss the conceivability arguments for or against each version of physicalism or dualism, such as:

1. Descartes' argument for substance dualism;
2. Kripke's modal argument against type physicalism;
3. Chalmers' zombie argument against minimal physicalism;
4. the meta-modal argument for minimal physicalism.

In Section 3, I argue that for each conceivability argument (except Chalmers' zombie argument), we can construct an "inverted" argument that has the contrary conclusion of the original argument. I argue further that between a conceivability argument and its "inverted" counterpart, we cannot know or have evidence for which one is sound. It follows that we cannot determine whether physicalism is true by appealing to a conceivability argument. I present this problem in the form of a dilemma.

In Section 4, I discuss Chalmers' zombie argument. I argue that Chalmers does not provide sufficient justification for its first premise. As a result, it is not clear whether the zombie argument is sound. Therefore, we cannot determine whether minimal physicalism is false by resorting to this argument. In a word, none of the conceivability arguments can provide us with an answer to the question whether physicalism is true.

1. Physicalism, Dualism and Their Modal Commitments

Roughly speaking, physicalism is the thesis that only physical things exist, or

that everything is physical. In contrast, dualism is the view that over and above the physical things in the actual world, there are “mental” things. But what does “physical things” mean? What are “mental things”? Philosophers have provided different answers to these questions at different times. In what follows, I will outline the main ideas of three versions of physicalism and dualism. Moreover, I will argue that each view has its own modal commitment.

1.1 Substance Physicalism and Substance Dualism

According to substance monism, everything in the world is a substance of one kind. According to one form of substance monism, so-called “idealism”, all things in the world are constituted of mental stuff. For example, in Berkeley’s view, any object that we know is a collection of “ideas actually imprinted on the senses, or else such as are perceived by attending to the passions and operations of the mind, or lastly ideas formed by help of memory and imagination, either compounding, dividing, or barely representing those originally perceived in the aforesaid ways.”⁹⁴ However, as the modern sciences developed, this view was confronted with a lot of explanatory problems and consequently received less advocacy than before. In this dissertation, I put aside the discussion about idealism.

The other form of substance monism, so-called “substance physicalism”, holds that everything in the world is constituted of material stuff. In particular, according to substance physicalism, the mind of any human being, i.e., its capacity to perceive, will, doubt, reason, etc., is material stuff (or in other words, a material substance). Contrasting with this view, substance dualism holds that mind and body are two distinct entities.⁹⁵ According to substance dualism, the mind of a person is a mental (or non-material) substance; the body of a person is a material substance. Every human being is composed of a mind and a body, that is, a mental substance and a material substance.

Roughly speaking, a substance can be analogous to an individual. This is for two reasons: Firstly, any substance can exist independently of any other substances. Just as a mug can exist independently of a table and a table can exist independently of a

⁹⁴ Berkeley, G. (1948–1957). Vol., 2. p. 109.

⁹⁵ In this dissertation, I use “Cartesian dualism” and “substance dualism” interchangeably. Note, however, that there are other versions of substance dualism that should be distinguished from Cartesian dualism. For example, Lowe (2006) claims that any human being is a composite entity consisting of a body and another person. But he argues that this other person cannot be considered mental stuff.

mug, if one's body and one's mind are two separate substances, then they can exist without the existence of each other. Secondly, a substance instantiates properties. A mug can be red, round and light. Being red, round and light are properties of the mug. Our minds and bodies, as two different kinds of substances, instantiate different properties. As has been mentioned, our minds can perceive, will, doubt and reason, etc. Our bodies have weight, height and color, etc.

There are various ways to formulate the commitments of substance physicalism and substance dualism. In the following, I discuss two formulations. According to the first, which resorts to the identity of mind and body, substance physicalism can be read as a thesis as follows:

(T₁) My mind = my body.

Correspondingly, substance dualism can be regarded as the negation of T₁:

(T₂) My mind \neq my body.

According to the second formulation, which is established in terms of the relation between a substance and its properties, substance physicalism can be regarded as a thesis as follows:

(T₃) My mind is material.

Correspondingly, substance dualism can be regarded as the negation of T₃:

(T₄) My mind is not material.

Moreover, both substance physicalism and substance dualism have their modal commitments. Since there are two ways to characterize them, respectively, there are correspondingly two ways in which their modal commitments can be characterized.

Before moving on, I presuppose T₅ as a plausible premise.

(T₅) If $a = b$, then it is necessary that $a = b$.⁹⁶

If "a" and "b" are both rigid designators, then this thesis is true. As Kripke argues, a rigid designator refers to the same thing throughout all possible worlds. Thus, if the referents of two rigid designators are identical in the actual world, they are identical in

⁹⁶ Let us assume that both "a" and "b" are rigid designators.

all possible worlds.

Furthermore, based on Kripke's theory of rigid designators, we have good reasons to believe that if the referents of two rigid designators are not identical in the actual world, they are not identical in all possible worlds. So the following thesis, T_6 , is also plausible:

(T_6) If $a \neq b$, then it is necessary that $a \neq b$.

"My mind" and "my body" are two rigid designators. "My mind" refers to my mind in the actual world, therefore, it refers to my mind in all possible worlds in which I exist. "My body" refers to my body in the actual world, therefore, it refers to my body in all possible worlds in which I exist. So if "my mind" and "my body" co-refer actually, they co-refer necessarily. That is to say, T_7 is acceptable:

(T_7) If my mind = my body, then it is necessary that my mind = my body.

For the same reason, T_8 should also be accepted:

(T_8) If my mind \neq my body, then it is necessary that my mind \neq my body.

Moreover, since substance physicalists hold that my mind and my body are identical, then based on T_1 and T_7 , they have to accept T_9 :

(T_9) It is necessary that my mind = my body.

By the same token, since substance dualists hold that my mind and my body are not identical, then based on T_2 and T_8 , they have to accept T_{10} :

(T_{10}) It is necessary that my mind \neq my body.

It follows that if it is possible that my mind = my body, then substance physicalism is true but substance dualism is false; and if it is possible that my mind \neq my body, then substance dualism is true but substance physicalism is false.

Another way to formulate the modal commitments of substance physicalism and dualism is to appeal to the notion of essential property. We can understand the distinction between an essential property and a non-essential property by help of the following example. Consider a mug. It is red. Yet, it could exist without being red. It *could* be blue, yellow, or any other color. We can thus say that being red is a

non-essential property of this mug. On the contrary, the mug, which has spatial extension, cannot exist without having spatial extension. Thus, we can say that having spatial extension is an essential property of this mug.

Being material is an essential property for any thing if it is material. Plus, being non-material is an essential property for any thing if it is non-material. Thus, although it is to be determined whether or not my mind is material, at least one thing is clear: If my mind is material, then it is essentially material; if my mind is not material, then it is essentially non-material. Moreover, as is commonly accepted, the distinction between an essential property and a non-essential property can be understood in terms of modal terms: An essential property of a thing is a property that this thing has necessarily; a non-essential property of a thing is a property that this thing has contingently. Thus, we can accept the following two theses, T₁₁ and T₁₂.⁹⁷

(T₁₁) If my mind is material, then it is necessary that it is material.

(T₁₂) If my mind is not material, then it is necessary that it is not material.

Since substance physicalists hold T₃, which says that my mind is material, they have to accept T₁₃:

(T₁₃) It is necessary that my mind is material.

Since substance dualists hold T₄, which says that my mind is not material, they have to accept T₁₄:

(T₁₄) It is necessary that my mind is not material.

It follows that if it is possible that my mind is material, then substance physicalism is true but substance dualism is false; and if it is possible that my mind is not material, then substance dualism is true but substance physicalism is false.

1.2 Type Physicalism and Type Dualism

Over the course of the past few decades, the idea that a mind is a mental substance has encountered many explanatory problems and consequently plays a

⁹⁷ Some philosophers deny that the distinction between an essential property and a non-essential property can be characterized in terms of modal terms. For example, Fine argues that although it is necessary for the number 2 to be the member of the set {2}, being the member of {2} is not an essential property for the number 2. See Fine (1994). However, I will not discuss the difference between essentiality and necessity in this dissertation but assume that they are equivalent.

small role in contemporary discussion in philosophy of mind. For example, the fact that mind, as a mental substance, would exist in time but not in space, is considered incompatible with contemporary physics. Moreover, if minds are independent entities, then it seems impossible to know what happens in other persons' minds.

Type dualism, which is a logically weaker view, is immune to these problems. Type dualists hold that there is only one kind of stuff in the world. Moreover, they hold that there are two kinds of properties, that is, material properties and mental properties, exemplified by one kind of substance.⁹⁸ That is to say, according to type dualists, it is not necessary to postulate two kinds of stuff. The fact that one's mind can think and one's body is spatially extended can be explained by appealing to one kind of stuff with two kinds of properties.

But one problem that both substance dualism and type dualism have in common is that the interaction between mind and body (in other words, the correlations between physical states and mental states) cannot be fully explained. This problem is considered to be fatal to substance dualism: If a change can be caused in a physical thing, the change has to take place in physical space. However, mind, according to substance dualism, is not located in physical space. So the consequence of substance dualism is that a mind can have no causal effect on a body. The problem of interaction also poses a difficulty for type dualism: It seems impossible that a non-physical property can exert a causal effect on a physical property.

In contrast with the view that there are two kinds of properties, type physicalists identify mental states with neural states.⁹⁹ That is to say, type physicalism holds that for any kind of mental state, there is an identity with a certain kind of neural state. Philosophers believe this doctrine due to the observation that certain neural states of the brain and certain mental phenomena correlate with each other. For example, neuroscientists have observed that pain and C-fiber firing always occur at the same time: Every time one feels pain, one's C-fiber is firing. How can we explain this correlation? One natural answer is that pain is identical with C-fiber firing. If these two states are in fact the same one, it is no mystery why they co-occur.

So far, I have outlined the main ideas of type dualism and type physicalism. In the following, I will probe into the modal commitments that these theories have to hold. The following thesis is one of the commitments of type physicalism:

⁹⁸ For more details on type dualism, see Campbell (1984); Swinburne (1986); Strawson (1994); Chalmers (1996).

⁹⁹ For the idea of type physicalism, see Place (1956); Feigl (1967); Smart (1959).

(T₁₅) Pain = C-fiber firing

Type dualists, who hold that mental states and neural states are two different kinds of properties, must deny T₁₅. Rather, they would accept the negation of T₁₅, i.e., T₁₆:

(T₁₆) Pain \neq C-fiber firing.

Moreover, “pain” and “C-fiber firing” are both rigid designators. As a result, if we follow Kripke, and if pain and C-fiber firing are identical in the actual world, then they are identical in all possible worlds. In other words, if Kripke is right, the following conditional is true:

(T₁₇) If pain = C-fiber firing, then it is necessary that pain = C-fiber firing.

For the same reason, the following conditional also holds:

(T₁₈) If pain \neq C-fiber firing, then it is necessary that pain \neq C-fiber firing.

If this is true, then based on T₁₅ and T₁₇, type physicalists have to accept T₁₉, which is the modal commitment of type physicalism:

(T₁₉) It is necessary that pain = C-fiber firing.

Based on T₁₆ and T₁₈, type dualists then have to accept T₂₀, which is the modal commitment of type dualism:

(T₂₀) It is necessary that pain \neq C-fiber firing.

It follows that if it is possible that pain = C-fiber firing, then type physicalism is true but type dualism is false; if it is possible that pain \neq C-fiber firing, then type dualism is true but type physicalism is false.

1.3 Supervenience Physicalism as Minimal Physicalism

Type physicalism is criticized for not allowing for the occurrence of one and the same mental state in other organisms whose nervous systems differ from ours. If pain is identical with C-fiber firing, according to type physicalism, it follows that an organism can only feel pain if it has C-fibers. In other words, according to type physicalism, some other species that have a nervous system different from ours cannot feel pain. However, this is rather counter-intuitive. It was this difficulty that

has led to a decline of type physicalism. Physicalists then turned to weaker forms of physicalism, such as functionalism. According to functionalism, a property exemplified in the actual world can be realized in different ways.¹⁰⁰ Pain may be realized by C-fiber stimulation, but also by a radically different nervous system.

Among all versions of physicalism, supervenience physicalism dubbed as “minimal physicalism” is the weakest form.¹⁰¹ That is to say, supervenience physicalism is the view that anyone who calls herself a physicalist has to accept. The idea of supervenience can be illustrated with the following example:

A dot-matrix picture has global properties — it is symmetrical, it is cluttered, and whatnot — and yet all there is to the picture is dots and non-dots at each point of the matrix. The global properties are nothing but patterns in the dots.¹⁰²

According to supervenience physicalism, all properties of the actual world are analogous to the global properties in the picture, and the microphysical properties of the actual world are analogous to the dots in the picture. If the patterns in the dots are fixed, the global properties in the picture are fixed. By the same token, if the distribution of the microphysical properties is fixed, the distribution of all the properties of the actual world is fixed. In other words, supervenience physicalism holds that any property of the actual world is necessitated by all microphysical properties of the actual world.¹⁰³ According to this view, a microphysical duplicate of the actual world has to be a duplicate *simpliciter* of the actual world.

Phenomenal properties, which are the qualitative aspects of our consciousness, are properties of the actual world. For example, when one experiences pain, there is something it is like to be in pain; when one is looking at a green leaf, there is something it is like to see the very green. If supervenience physicalism is true, it follows that phenomenal properties of the actual world are necessitated by all microphysical properties of the actual world. In other words, if a possible world is microphysically identical with the actual world, then it has to be phenomenally identical with the actual world. If we take P as the conjunction of all the

¹⁰⁰ For more detail on functionalism, see Putnam (1960); Armstrong (1968).

¹⁰¹ Lewis (1983), p. 361.

¹⁰² Lewis (1986), p. 14.

¹⁰³ In this dissertation, I assume that the supervenience view, which says that every property of the actual world supervenes on all microphysical properties, and the necessity view, which says that every property of the actual world is necessitated by all microphysical properties, are equivalent. For more about the equivalence, see Stoljar (2005), p. 116.

microphysical truths of our world, and Q as any arbitrary phenomenal truth of our world, then it seems that minimal physicalism requires that T_{21} be true.

(T_{21}) It is necessary that if P is true, then Q is true. (i.e., $\Box (P \rightarrow Q)$)

T_{21} is a rough formulation of minimal physicalism, which may face obvious counterexamples. For example, it is confronted with the so-called “epiphenomenal ectoplasm problem”.¹⁰⁴ Consider a possible world W, in which the distribution of microphysical and phenomenal properties is the same as in the actual world with one difference: World W contains an extra epiphenomenal ectoplasm, which is a phenomenal property that has no causal interaction with other properties in W. We have a strong intuition that even if minimal physicalism is true, the existence of W is possible. That is to say, the truth of minimal physicalism and the existence of W as a possible world are compatible. However, if we take T_{21} as the true characterization of minimal physicalism and if we assume that minimal physicalism is true in the actual world, then we have to exclude W as a possible world: According to T_{21} , if minimal physicalism is true in the actual world, then any possible world that is a microphysical duplicate of the actual world has to be a duplicate *simpliciter* of the actual world. However, W, which is a microphysical duplicate of the actual world, is phenomenally different from the actual world, for it has an epiphenomenal ectoplasm — a property the actual world does not have. As a result, we have to eliminate W as a possible world, which is counter-intuitive.

In order to preserve our intuition that W’s being a possible world and physicalism’s being true in the actual world are compatible, Jackson suggests that we adjust the formulation of minimal physicalism by introducing the notion of minimal physical duplicates. A minimal physical duplicate of the actual world is a world that is microphysically identical with the actual world and that contains nothing else.¹⁰⁵ Minimal physicalism, then, can be formulated as a thesis which says that any *minimal* microphysical duplicate of the actual world has to be a duplicate *simpliciter* of the actual world. In other words, if minimal physicalism is true, then any possible world in which P is true and in which there is no other fundamental truth besides what is expressed by P is a duplicate *simpliciter* of the actual world. That is to say, minimal physicalism requires that T_{22} , in which T stands for a “that is all” clause, be true.

¹⁰⁴ See Horgan (1983); Lewis (1983).

¹⁰⁵ See Jackson (1998), p. 26.

(T₂₂) It is necessary that if PT is true, then Q is true. (i.e., $\Box (PT \rightarrow Q)$)

The epiphenomenal ectoplasm problem does not hold for T₂₂: Since W, which contains an extra epiphenomenal ectoplasm, is not a PT-world, we do not have to rule it out as a possible world even if physicalism is true in the actual world.

Contrary to supporters of minimal physicalism, dualists hold the opposite view, which can be formulated as T₂₃:¹⁰⁶

(T₂₃) It is possible that $PT \wedge \neg Q$. ($\Diamond (PT \wedge \neg Q)$)

So far, we have seen that each version of physicalism and dualism has its modal commitment, as listed below:

The modal commitment of substance physicalism:

(T₉) It is necessary that my body = my mind.

or,

(T₁₃) It is necessary that my mind is material.

The modal commitment of substance dualism:

(T₁₀) It is necessary that my mind \neq my body.

or,

(T₁₄) It is necessary that my mind is not material.

The modal commitment of type physicalism:

(T₁₉) It is necessary that pain = C-fiber firing.

The modal commitment of type dualism:

(T₂₀) It is necessary that pain \neq C-fiber firing.

The modal commitment of minimal physicalism:

(T₂₂) $\Box (PT \rightarrow Q)$

¹⁰⁶ In order to distinguish the dualism which holds that $\Diamond (PT \wedge \neg Q)$ from substance dualism and type dualism, I call this version of dualism “minimal dualism” in the following.

The modal commitment of minimal dualism:

$$(T_{23}) \quad \Diamond (PT \wedge \neg Q)$$

In the following sections, I will discuss the conceivability arguments for or against each version of physicalism or dualism in turn.

2. Conceivability Arguments

Generally, a conceivability argument has the following structure:

It is ideally (negatively/positively) conceivable that p .

Ideal (negative/positive) conceivability entails possibility. (CP– or CP+)

Conclusion: It is possible that p .

Furthermore, if p in question is a proposition such that its being possibly true entails that it is true, then we can construct an alternative form of conceivability argument with the following structure:

It is ideally (negatively/positively) conceivable that p .

Ideal (negative/positive) conceivability entails possibility. (CP– or CP+)

If it is possible that p is true, then p is true.

Conclusion: p is true.

In what follows, we will see that except Chalmers' zombie argument, all the following conceivability arguments take the alternative form.

1. Descartes' arguments for substance dualism;
2. Kripke's modal argument against type physicalism;
4. the meta-modal argument for minimal physicalism.

In the remainder of this section, I will discuss these arguments in turn. In Section 3, I will argue that the soundness of each one cannot be known or justified. In Section 4, I will argue that the soundness of the zombie argument, the trouble with which is different from that with other conceivability arguments discussed in this chapter, cannot be known or justified, either.

2.1 Descartes' Conceivability Argument

Since there are two ways to formulate Descartes' substance dualism, there are correspondingly two ways to reconstruct his argument for substance dualism. The first version of reconstruction that I use is due to Wilson. I simplify it as follows:

1. If A can exist apart from B, and vice versa, A is really distinct from B, and B from A.
2. Whatever I can clearly and distinctly understand can be brought about by God.
3. If I can clearly and distinctly understand A apart from B, and B apart from A, then God can bring it about that A and B are apart.
4. If God can bring it about that A and B are apart, then A and B can exist apart.
5. Let A be my mind, and let B be my body.

Conclusion: My mind exists apart from my body.¹⁰⁷

A few of the steps in the argument need to be clarified. Premise 1 says that if it is (metaphysically) possible that A and B are apart, then they are actually apart. Premise 1 is in fact the contraposition of T₅, which says that if $a = b$, then it is necessary that $a = b$, and the truth of which has been vindicated in Section 1. Let us now consider Premise 4 and 2. As Balog interprets, "the possibility of God's bringing about something can be thought in terms of possibility *simpliciter*", i.e., metaphysical possibility.¹⁰⁸ Understood in this way, Premise 4 is actually a tautology: If it is (metaphysically) possible that A and B are apart, then it is (metaphysically) possible that A and B are apart. Thus, Premise 4 is redundant in this argument. Plus, Premise 2 can be read as follows:

(ICP) Whatever I clearly distinctly conceive of is (metaphysically) possible.

However, as has been argued in Chapter 2, that we can conceive of something does not entail possibility due to our cognitive limitations. We can conceive of a situation in which GC is false, but it is impossible for GC to be false. So if Premise 2 is read as ICP, then Descartes' argument collapses.

In order to interpret Descartes' argument in a more charitable way, we can

¹⁰⁷ This is a simplified version of Wilson's reconstruction. For her original reconstruction of Descartes' argument, see Wilson (1978), p. 166.

¹⁰⁸ Balog (1998), p. 54.

interpret Premise 2 as the CP thesis since there are no obvious counterexamples to CP.

(CP) Ideal conceivability entails possibility.

Putting all this together, Descartes' argument can be reconstructed as follows:

Argument 1

6. It is ideally conceivable that my mind \neq my body.
 7. Ideal conceivability entails possibility.
 8. If it is possible that my mind \neq my body, then my mind \neq my body.
- Conclusion: My mind \neq my body.

Another way to reformulate Descartes's argument for substance dualism is as follows:

Argument 2

9. It is ideally conceivable that my mind is not material.
 10. Ideal conceivability entails possibility.
 11. If it is possible that my mind is not material, then my mind is not material.
- Conclusion: My mind is not material.¹⁰⁹

Chalmers argues that these two arguments are not valid. Without doubt, the sense of conceivability involved in Premise 6 and 9 should be 1-conceivability, for 2-conceivability is not always acquired a priori. So it is 1-conceivability that is our central concern and that plays a role in philosophical discussions. It is also clear that Premise 8 and 11 should be interpreted as involving 2-possibility. This is because it is 2-possibility that characterizes what is metaphysically possible. Without giving any reason, however, Chalmers concludes quickly that the arguments are not valid because in each of them, the first premise involves 1-conceivability but the third premise involves 2-possibility.

Indeed, as has been addressed in Chapter 2, 1-conceivability is not a guide to 2-possibility. However, I have also argued that, it is valid to infer that a statement is 2-possible from the fact that it is 1-conceivable if the primary and secondary intension of this statement coincide. So if Chalmers is right regarding Descartes' arguments, he

¹⁰⁹ This version of reconstruction is due to Chalmers. See Chalmers (2010), p. 199.

needs the following premises:

- (a) The primary and secondary intension of the statement “my mind \neq my body” are different.
- (b) The primary and secondary intension of the statement “my mind is not material” are different.

However, it is contentious that (a) and (b) are true. In the case of water, the term “water” has two different intensions because there are two ways for us to know its referent. Firstly, we can know what water is by means of the meaning of “water”. Anyone who knows the meaning of “water” knows that water is watery stuff. So the knowledge that water is watery stuff is acquired a priori. Secondly, we can know what water is through its essence, which requires empirical evidence. Anything is regarded to be a sample of water iff it has the same microstructure as water. In other words, anything can be taken as a sample of water iff it is a sample of H₂O. Thus, the primary and secondary intension of “water”, which reflect two different ways in which we know the referent of “water”, are different.

But unlike in the case of water, there are not two different ways for us to know what “my mind” or “my body” refers to. If there is only one way to know the referent of the terms “my mind” and “my body”, then the primary and secondary intension of these two terms are the same, respectively. In fact, I am not sure whether Chalmers is right on this point. Either Chalmers is right, or he is wrong. If Chalmers is right, then Descartes’ argument fails. If he is wrong, then there is a chance that Descartes’ argument might be sound. However, I will argue in the next section that, even if Descartes’ argument is sound, we cannot know or have evidence for this. So in either case, whether or not substance dualism is true cannot be determined by appealing to Descartes’ conceivability argument.

2.2 Kripke’s Modal Argument

In *Naming and Necessity*, Kripke provides a modal argument against type physicalism, according to which pain is identical with C-fiber firing. As has been said in the last section, pain and C-fiber firing are necessarily identical if they are identical. So if it is possible that pain is not C-fiber firing, then pain is not C-fiber firing. At any rate, it seems possible that pain is not C-fiber firing. So if the apparent possibility is a

guide to the actual possibility, then we can conclude that pain is not C-fiber firing and rebut type physicalism.

However, some statements seem possibly true, but this apparent possibility is not a guide to what is actually possible. For example, it seems that “heat might have turned out not to be molecular motion”, but it is not actually possible that heat is not molecular motion.¹¹⁰ Both of the terms “heat” and “molecular motion” refer rigidly. So if they refer to the same thing in the actual world, they co-refer in all possible worlds. This is why the apparent possibility that heat is not molecular motion is not an actual possibility.

However, as Kripke argues, this apparent possibility can be “explained away”: When we say that it is possible that heat is not molecular motion, what is true in what we say is that we “could have sensed a phenomenon in the same way we sense heat, that is, [feel] it by means of its production of the sensation we call ‘the sensation of heat’ (call it ‘S’), even though that phenomenon was not molecular motion.”¹¹¹ In other words, in the case of heat, what is actually possible is that the sensation of heat is not molecular motion. According to Kripke, from the fact that it is *apparently possible* that heat is not molecular motion, we can only infer that it is *actually possible* that the sensation of heat is not molecular motion, but we cannot infer that it is *actually possible* that heat (which is in fact molecular motion) is not molecular motion. However, the feeling that pain is not C-fiber firing cannot be explained away in this way, because the sensation of pain is pain itself. So according to Kripke, if it is apparently possible that pain is not C-fiber firing, then it is actually possible that pain and C-fiber firing are not identical.

If we interpret the notion of apparent possibility as 1-conceivability, then we can rephrase Kripke’s reasoning within the framework of Chalmers’ 2-D semantics. In the case of heat, from the fact that it is 1-conceivable that heat is not molecular motion, we can only infer that it is 1-possible that heat is not molecular motion, but we cannot infer that it is 2-possible that heat is not molecular motion. However, in the case of pain and C-fiber, the primary intension and secondary intension of “pain” are the same, so if it is 1-conceivable that pain is not C-fiber firing, then it is 2-possible that pain is not C-fiber firing.

As has been addressed in Chapter 2, only ideal conceivability is a guide to

¹¹⁰ Kripke (1980), p. 150.

¹¹¹ Ibid.

possibility. Thus, in the framework of Chalmers' theory of conceivability and possibility, Kripke's argument against type physicalism can be reconstructed as follows:

Argument 3

- 12. It is ideally conceivable that pain \neq C-fiber firing.
- 13. Ideal conceivability entails possibility.
- 14. If it is possible that pain \neq C-fiber firing, then pain \neq C-fiber firing.

Conclusion: Pain \neq C-fiber firing.¹¹²

2.3 Chalmers' Zombie Argument

In his book *The Conscious Mind*, Chalmers advances a zombie argument against minimal physicalism. As Chalmers puts it, the basic idea of this argument is as follows:

If a physically identical zombie world is logically possible, it follows that the presence of consciousness is an extra fact about our world, not guaranteed by the physical facts alone. The character of our world is not exhausted by the character supplied by the physical facts; there is extra character due to the presence of consciousness... The failure of logical supervenience implies that some positive fact about our world does not hold in a physically identical world, so that it is a further fact over and above the physical facts... [Materialism is] the doctrine that the physical facts about the world exhaust all the facts, in that every positive fact is entailed by the physical facts. If zombie worlds or inverted worlds are possible, the physical facts do not entail all the positive facts about our world, and materialism is false.¹¹³

A zombie world is a microphysical duplicate of the actual world but lacks phenomenal consciousness. If we take P as a conjunction of all the microphysical truths of the actual world, and T as a "that is all" clause and Q as any phenomenal truth of the actual world, then a world W is a zombie world iff $PT \wedge \neg Q$ is true in W. If a zombie world is ideally conceivable (i.e., logically possible), this means that it is

¹¹² This reconstruction is due to Chalmers. See Chalmers (2010), p. 201.

¹¹³ Chalmers (2006), pp. 123-124. Note that "materialism" in this passage refers to minimal physicalism.

ideally conceivable that $PT \wedge \neg Q$. Moreover, since ideal conceivability entails possibility, we can infer that it is possible that $PT \wedge \neg Q$ from the fact that it is ideally conceivable that $PT \wedge \neg Q$. As has been said in Section 1, the truth of minimal physicalism requires that $\Box (PT \rightarrow Q)$ be true. Thus, if it is ideally conceivable that $PT \wedge \neg Q$, and if CP holds, then minimal physicalism is false.

The zombie argument runs as follows:

Argument 4

15. It is ideally conceivable that $PT \wedge \neg Q$.

16. Ideal conceivability entails possibility.

Conclusion: It is possible that $PT \wedge \neg Q$.

2.4 The Anti-Zombie Argument

Some philosophers respond to Chalmers' zombie argument by appealing to the anti-zombie argument, which has the conclusion that $\Box (PT \rightarrow Q)$ is true.¹¹⁴ Anti-zombies are defined "as beings which are bare physical duplicates of us, inhabiting a universe which is a bare physical duplicate of ours, but none the less having exactly the same conscious experiences as we do. That is, in the anti-zombie world consciousness is a physical phenomenon, supervening metaphysically on the world's microphysical features."¹¹⁵ If anti-zombies exist, this means that $\Box (PT \rightarrow Q)$ is true. Naturally, we do not know whether anti-zombies exist. Nevertheless, the anti-zombists argue that the existence of anti-zombies is ideally conceivable, therefore possible. Furthermore, they argue that the possibility of the existence of anti-zombies entails that dualists' criticism of minimal physicalism cannot hold. It is not difficult to see why: If anti-zombies exist in a possible world, this means that $\Box (PT \rightarrow Q)$ is possibly true. Since for any p , $\Diamond \Box p \rightarrow \Box p$ is true in system S5, $\Box (PT \rightarrow Q)$ is true if it is possibly true.

So the anti-zombie argument runs as follows:

Argument 5

17. It is ideally conceivable that $\Box (PT \rightarrow Q)$.

¹¹⁴ See Marton (1998); Sturgeon (2000); Frankish (2007); Brown (2010)

¹¹⁵ Frankish (2007), p. 653.

-
18. Ideal conceivability entails possibility.
19. If it is possible that it is necessary that p , then it is necessary that p . (S5:
 $\Diamond\Box p \rightarrow \Box p$)

Conclusion: $\Box (PT \rightarrow Q)$ is true.

3. The “Inverted” Conceivability Arguments

In the last section, I have presented five conceivability arguments for or against each version of physicalism or dualism. In this section, I will argue that for each conceivability argument except Chalmers’ zombie argument, we can construct an “inverted” argument that has the contrary conclusion of the original one.

The “inverted” argument of Descartes’ argument reconstructed in the first of the two ways described above runs as follows:

Argument 1’

- 6’. It is ideally conceivable that my mind = my body.
- 7’. Ideal conceivability entails possibility.
- 8’. If it is possible that my mind = my body, then my mind = my body.
- Conclusion: My mind = my body.

The “inverted” argument of Descartes’ argument reconstructed in the second of the two ways described above runs as follows:

Argument 2’

- 9’. It is ideally conceivable that my mind is material.
- 10’. Ideal conceivability entails possibility.
- 11’. If it is possible that my mind is material, then my mind is material.
- Conclusion: My mind is material.

The “inverted” argument of Kripke’s argument can be constructed as follows:

Argument 3’

- 12’. It is ideally conceivable that pain = C-fiber firing.
- 13’. Ideal conceivability entails possibility.
- 14’. If it is possible that pain = C-fiber firing, then pain = C-fiber firing.

Conclusion: Pain = C-fiber firing.

The “inverted” argument of the anti-zombie argument can be constructed as follows:

Argument 5’

17’. It is ideally conceivable that $\neg \Box (PT \rightarrow Q)$.

18’. Ideal conceivability entails possibility.

19’. If it is possible that it is necessary that $\neg p$, then it is necessary that $\neg p$. (S5:

$$\Diamond \neg \Box q \rightarrow \neg \Box q)$$

Conclusion: $\neg \Box (PT \rightarrow Q)$ (i.e., $\Diamond (PT \wedge \neg Q)$) is true.¹¹⁶

Here is a reason for why some conceivability arguments have their “inverted” counterparts: If p is a proposition such that its being possibly true entails that it is true and its being possibly false entails that it is false, then we can construct a pair of parallel conceivability arguments which have contrary conclusions. A conceivability argument has the following structure:

C₁. It is ideally conceivable that p .

C₂. Ideal conceivability entails possibility.

C₃. If it is possible that p is true, then p is true.

Conclusion: p is true.

Its “inverted” counterpart has the following structure:

I₁. It is ideally conceivable that $\neg p$.

I₂. Ideal conceivability entails possibility.

I₃. If it is possible that $\neg p$ is true, then $\neg p$ is true.

Conclusion: $\neg p$ is true.

These two arguments cannot both be sound, otherwise we have to accept the conclusion that p is both true and false, which is absurd. It follows that if the CP thesis holds, then between C₁ and I₁, only one is true, but the other is not. The proponents of conceivability arguments, who believe that we can make the right decision between dualism and physicalism by appealing to a conceivability argument,

¹¹⁶ It can be seen that the “inverted” argument of the anti-zombie argument has the same conclusion as the zombie argument, but the premises and the structure are different.

have to tell the sound one from the unsound one. That is to say, it is their duty to single out the true proposition between C_1 and I_1 . However, I do not think they are able to do this. In the following, I will argue that there is a dilemma when we try to single out the sound conceivability argument from its “inverted” counterpart.

As has been addressed at the end of Chapter 2, if p is a proposition such that if it is possibly true, then it is true and if it is possibly false, then it is false, and if the CP thesis holds, then the truth-value of p is a priori knowable. Moreover, according to the definition of ideal negative conceivability (INC), which says that p is ideally negatively conceivable iff p is not ruled out a priori, we can conclude that for any p whose truth-value is a priori knowable, it is ideally negatively conceivable iff it is true. Since by definition, INC and IPC (ideal positive conceivability) are equivalent, if p 's truth-value is a priori knowable, p is ideally positively conceivable iff p is true. In a word, if p 's truth-value is a priori knowable, p is ideally conceivable iff p is true. Put differently, if p 's truth-value is a priori knowable, then between p and $\neg p$, the one which is true is ideally conceivable, but the other one is not.

Let us now consider this question: If p 's truth-value is a priori knowable, between p and $\neg p$, can we know or have evidence for which one is ideally conceivable? Assume that we can. In order to tell the conceivable one from the inconceivable one, we have to appeal to an independent argument. Let us assume that this argument provides a reason for accepting that p is ideally negatively conceivable. It follows that $\neg p$ is demonstrated to be inconceivable, that is, a priori false. In other words, this argument actually shows that p is a priori true and therefore true. By the same token, if the independent argument shows that $\neg p$ is ideally negatively conceivable, it actually shows that $\neg p$ is true. Thus, if p 's truth-value is a priori knowable, it is necessary that one provides an argument to determine the truth-value of p in order to tell whether p is ideally negatively conceivable. However, if we can know or have evidence for whether p is true by appealing to this argument, why do we need to invoke a conceivability argument? In this case, a conceivability argument is rendered redundant. On the other hand, without such an independent argument, we have no idea as to whether p is ideally negatively conceivable. Thus, there is a dilemma for CP– when we use it to determine whether a given proposition is possibly true if the truth-value of this proposition is a priori knowable.

We face the same dilemma if we turn to CP+. INC and IPC are equivalent by definition. Hence, if we invoke another argument to determine which one, p or $\neg p$, is

ideally positively conceivable, it should suffice to demonstrate which one is ideally negatively conceivable. Thus, the same dilemma with CP[−] also holds for CP⁺: Either this additional argument renders a conceivability argument redundant, or the soundness of this conceivability argument cannot be justified.¹¹⁷

4. The Problem with the Zombie Argument

The structure of the zombie argument is different from other conceivability arguments discussed in this chapter. Some philosophers hold that the anti-zombie argument is the “inverted” counterpart of the zombie argument, but I do not think so.¹¹⁸ The zombie argument and the anti-zombie argument do have a contrary conclusion to each other, but their structures are different. I have argued that there is a condition for a conceivability argument to have an “inverted” counterpart: The proposition p , which is involved in a conceivability premise, has to be a proposition such that if it is possibly true, then it is true and if it is possibly false, then it is false. The anti-zombie argument meets this requirement because $\Diamond \Box (PT \rightarrow Q) \rightarrow \Box (PT \rightarrow Q)$ and $\Diamond \neg \Box (PT \rightarrow Q) \rightarrow \neg \Box (PT \rightarrow Q)$ hold. But we cannot determine whether it is the case that $PT \wedge \neg Q$ entails $\Box (PT \wedge \neg Q)$; nor whether it is the case that $PT \rightarrow Q$ entails $\Box (PT \rightarrow Q)$. Because of this, we cannot construct an “inverted” argument for the zombie argument. So the problem with other conceivability arguments discussed in this chapter does not hold for the zombie argument. The problem (if indeed there is one) with it must be another one.

Now let us consider the zombie argument. If the CP thesis holds, then its soundness depends on its conceivability premise:

15. It is ideally conceivable that $PT \wedge \neg Q$.

According to the definition of INC, Premise 15 is true iff $PT \wedge \neg Q$ is not a priori false. In other words, Premise 15 is true iff $PT \wedge \neg Q$ is a priori true or the truth-value of $PT \wedge \neg Q$ is a posteriori knowable. As has been mentioned, Q is a phenomenal truth of the actual world, so $\neg Q$ is false. Therefore, $PT \wedge \neg Q$ is false. Thus, $PT \wedge \neg Q$ is ideally

¹¹⁷ At the end of Chapter 3, my discussion has indicated this dilemma. I said: “If p is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false, then we cannot know or have evidence for whether p is ideally conceivable without knowing or having evidence of its truth-value.”

¹¹⁸ See Frankish (2007); Brown (2010).

negatively conceivable iff $PT \wedge \neg Q$ is a posteriori false. So in order to show that the zombie argument is sound, we have to appeal to an independent argument that provides a reason for accepting that $PT \wedge \neg Q$ is a posteriori knowable.

How, then, can we show that $PT \wedge \neg Q$ is a posteriori knowable? The only evidence that Chalmers provides is that we cannot deduce a priori that Q is true from the fact that PT is true. For example, in his paper *Consciousness and Its Place in Nature*, Chalmers argues that Type A physicalists fail to provide an argument for the claim that PT entails Q a priori. Type A physicalism is the thesis that $PT \rightarrow Q$ is a priori true (So Type A physicalists deny that it is ideally conceivable that $PT \wedge \neg Q$). Chalmers considers several approaches that type A physicalists might adopt in order to defend their position. For example, he says:

One way to argue for type-A materialism is to argue that there is some intermediate X such that (i) explaining functions suffices to explain X and (ii) explaining X suffices to explain consciousness.¹¹⁹

If there is an intermediate X such that it itself can be fully explained in terms of the language of physics and it can fully explain phenomenal consciousness, it follows that phenomenal consciousness can be fully explained in terms of the language of physics. In this case, $PT \rightarrow Q$ is a priori true because we can deduce Q a priori from PT . But as Chalmers puts it, the problem with this approach is obvious: Either X is itself a functional property, which can be fully explained in terms of the language of physics, or X itself is a non-functional property, which cannot be fully explained in terms of the language of physics. In the former case, (ii) is not satisfied; in the latter case, (i) is not satisfied. Hence, Chalmers concludes, “either way, the epistemic gap between the functional and the phenomenal remains as wide as ever”.¹²⁰

If Chalmers is right, then indeed Type-A physicalists cannot defend their position. But is it sufficient to conclude that $PT \wedge \neg Q$ is a posteriori knowable? I do not think so. It does not follow that p 's truth-value is not a priori knowable from the mere fact that we cannot know a priori that p . The fact that we cannot deduce that GC is true from all the mathematical theorems that available to us does not entail that GC is a posteriori knowable. By the same token, from the fact that we fail to show that

¹¹⁹ Chalmers (2002), p. 252.

¹²⁰ Chalmers (2002), p. 253.

$PT \rightarrow Q$ is a priori true, we cannot conclude that $PT \rightarrow Q$ is a posteriori knowable. So it remains to be determined whether or not it is ideally conceivable that $PT \rightarrow Q$. In this case, it is to be determined whether or not the zombie argument is sound.¹²¹

At the end of this chapter, let me briefly summarize my findings. I discuss a series of conceivability arguments in the debate of physicalism vs. dualism. Unlike many other opponents of these conceivability arguments, who typically respond to them by denying that their conceivability premises are true or that the CP thesis holds, I adopt a different strategy. I assume that the CP thesis holds. Based on this assumption, I argue that we cannot know or have evidence for whether the conceivability premises of these arguments are true. In other words, I argue that we cannot tell the soundness of these arguments.

¹²¹ This conclusion has also been indicated at the end of Chapter 3, where I said that if p is a proposition such that we know p is false but we do not know whether the truth-value of p is a posteriori knowable, we cannot know or have evidence for whether p is ideally conceivable.

Chapter 6: The Problem with Meta-Modal Conceivability Arguments

In this chapter, I discuss a kind of conceivability argument that is called “meta-modal conceivability argument”. In the last Chapter, I have argued that if p is ideally conceivable, then by resorting to the CP thesis, we can construct a conceivability argument and conclude that p is possibly true. The conceivability premise of a meta-modal conceivability argument is a modal claim which can be written as, for example, $\Box q$. Then, by appealing to the CP thesis, we can construct a meta-modal conceivability argument and conclude that $\Box q$ is possibly true, and therefore true (since $\Diamond \Box q \rightarrow \Box q$ is a theorem in S5).

However, there is an apparent problem with meta-modal conceivability arguments: By replacing “ $\Box q$ ” with “ $\neg \Box q$ ” in the conceivability premise, a meta-modal conceivability argument can always be “inverted” to a parallel argument with the contrary conclusion (since $\Diamond \neg \Box q \rightarrow \neg \Box q$ also holds in S5). This seems a result that we are reluctant to accept. Because of this, opponents of CP, such as Yablo, claim that it is the failure of the CP thesis that leads to the problem. Chalmers refuses this diagnosis. He responds that the problem is caused by double modality and proposes to exclude all modal claims from the scope of CP. In this chapter, I respond to both sides and argue that they miss the real problem of meta-modal conceivability arguments that is hidden beneath the apparent one and draw their conclusions too hastily. Moreover, I present this problem in the form of a dilemma.

1. Meta-Modal Conceivability Arguments

The structure of a general conceivability argument is as follows:

It is ideally conceivable that p .

Ideal conceivability entails possibility.

Conclusion: It is possible that p .

If a proposition p involved in the conceivability premise is itself a modal claim that is written as, for example, $\Box q$, and if we take S5 as the logic of metaphysical modality, then we can construct a conceivability argument that takes the meta-modal form. This kind of conceivability argument, which has the following structure, is called

meta-modal conceivability argument:

It is ideally conceivable that $\Box q$.

Ideal conceivability entails possibility.

If it is possible that $\Box q$, then $\Box q$ is true. (S5: $\Diamond \Box q \rightarrow \Box q$)

Conclusion: $\Box q$ is true.

However, a meta-modal conceivability argument can always be “inverted” to produce an argument that runs contrary to the original argument. The structure of the “inverted” counterpart is as follows:

It is ideally conceivable that $\neg \Box q$.

Ideal conceivability entails possibility.

If it is possible that $\neg \Box q$, then $\neg \Box q$ is true. (S5: $\Diamond \neg \Box q \rightarrow \neg \Box q$)

Conclusion: $\neg \Box q$ is true.

That is to say, to “invert” a meta-modal conceivability argument, we first replace $\Box q$ with $\neg \Box q$ in the conceivability premise. Next, by the CP thesis and the theorem $\Diamond \neg \Box p \rightarrow \neg \Box p$ in S5, we can infer that $\neg \Box q$ is true. In a word, by appealing to CP, a proposition $\Box q$ can be proven both true and false. However, this is an unacceptable consequence.

Below are two examples. The first one is the meta-modal conceivability argument for theism. The second one is the meta-modal conceivability argument for physicalism. I will discuss them in turn. The first conceivability argument is established on the basis of Plantinga’s modal argument for the existence of God, which appeals to the possible existence of a necessary being that is omniscient, omnipotent, and morally perfect. God, by definition, is a maximally excellent being. A being that has maximal excellence has two features. For one thing, as is generally accepted, a maximally excellent being possesses “omniscience, omnipotence, and moral perfection”.¹²² For another, according to Plantinga, a necessary being is greater than a mere actual being. Thus, necessary existence is a great-making property. To this point, Chalmers says:

Consider a pair of beings A and B that both do in fact exist. And suppose that A exists in every other possible world as well — that is, if any other possible world

¹²² Plantinga (1974b), p. 213.

has been actual, A would have existed. On the other hand, B exists in only some possible worlds; there are worlds W such that had any of them been actual, B would not have existed. Now according to the doctrine under consideration, A is so far greater than B.¹²³

Therefore, if God exists, this means that it is necessary that an omniscient, omnipotent, and morally perfect being exists. Naturally, it is not clear whether such a being actually exists. However, at least, it seems possible that this being exists. This intuition contributes to the key premise of Plantinga's modal argument for the existence of God: It is possible that it is necessary that an omniscient, omnipotent, and morally perfect being exists.

Altogether, Plantinga's modal argument runs as follows:

1. It is possible that it is necessary that an omniscient, omnipotent, and morally perfect being exists.
2. If it is possible that it is necessary that p , then it is necessary that p . (S5: $\Diamond \Box q \rightarrow \Box q$)

Conclusion: It is necessary that an omniscient, omnipotent, and morally perfect being exists.

Why is Premise 1 true? Plantinga does not provide a convincing reason but takes its truth for granted. As van Inwagen interprets, Plantinga's idea would be like this: "while it is true that one who rejected the premise of P would not thereby violate any canon of reason, neither would one who accepted the premise of P violate any canon of reason."¹²⁴ However, if we do not violate any canon of reason even if we deny Premise 1, why should we accept, rather than deny it? So without providing any reason for this premise, the soundness of Plantinga's argument is to be determined.

Nevertheless, we can find some hints from Plantinga's discourse on Anselm's ontological argument:

And when he says that a certain state of affairs is conceivable, he means to say, I believe, that this state of affairs is possible in our broadly logical sense; there is a possible world in which it obtains. That means that step (3) (which says God's existence in reality is conceivable) above may be put more perspicuously as

¹²³ Plantinga (1974a), pp. 104-105.

¹²⁴ P stands for Plantinga's modal argument. See van Inwagen (1977), p. 388.

(3') It is possible that God exists.

and step (6) as

(6') It is possible that there be a being greater than the being than which it is not possible that there be a greater.¹²⁵

According to this passage, it can be seen that Plantinga takes conceivability as equivalent to possibility. Thus, if it is conceivable that it is necessary that an omniscient, omnipotent, and morally perfect being exists, and if conceivability and possibility are equivalent, then Premise 1 is true. Moreover, as has been mentioned, there are two kinds of conceivability: *prima facie* conceivability and ideal conceivability. The latter kind is a reliable guide to possibility but the former is not. So if to provide a justification for Premise 1 requires invoking the notion of conceivability, this kind of conceivability must be ideal conceivability.

Taking into account the idea that ideal conceivability entails possibility, we can construct a meta-modal conceivability argument for the existence of God on the basis of Plantinga's ontological argument:

3. It is ideally conceivable that it is necessary that an omniscient, omnipotent, and morally perfect being exists.
4. Ideal conceivability entails possibility.
5. If it is possible that it is necessary that p , then it is necessary that p . (S5: $\Diamond\Box p \rightarrow \Box p$)

Conclusion: It is necessary that an omniscient, omnipotent, and morally perfect being exists.

However, as some philosophers, such as Yablo, point out, we can construct an "inverted" version of this conceivability argument. The "inverted" argument runs as follows:

- 3'. It is ideally conceivable that it is not necessary that an omniscient, omnipotent, and morally perfect being exists.
- 4'. Ideal conceivability entails possibility.
- 5'. If it is possible that it is not necessary that p , then it is not necessary that p .

¹²⁵ Plantinga (1974a), p. 88.

(S5: $\Diamond\neg\Box p \rightarrow \neg\Box p$)

Conclusion: It is not necessary that an omniscient, omnipotent, and morally perfect being exists.¹²⁶

In a word, by constructing a meta-modal conceivability argument and its “inverted” counterpart, we can conclude that God both does and does not exist.

Now we consider the second meta-modal argument, which I have already discussed in Chapter 5. Chalmers provides the zombie argument against minimal physicalism, which depends on the premise that $PT \wedge \neg Q$ is ideally conceivable and has the conclusion that $PT \wedge \neg Q$ is possible. In order to rebut the zombie argument, some philosophers construct the anti-zombie argument, which depends on the premise that $\Box (PT \rightarrow Q)$ is ideally conceivable and has the conclusion that $\Box (PT \rightarrow Q)$ is true. The anti-zombie argument can be reconstructed as follows:

6. It is ideally conceivable that $\Box (PT \rightarrow Q)$.
7. Ideal conceivability entails possibility.
8. If it is possible that it is necessary that p , then it is necessary that p . (S5: $\Diamond\Box p \rightarrow \Box p$)

Conclusion: $\Box (PT \rightarrow Q)$ is true.

One may hold that the zombie argument is the “inverted” counterpart of the anti-zombie argument, but it is not.¹²⁷ The anti-zombie argument has a meta-modal form, but the zombie argument does not. Rather, the “inverted” counterpart of the anti-zombie argument is the following one:

- 6'. It is ideally conceivable that $\neg\Box (PT \rightarrow Q)$.
- 7'. Ideal conceivability entails possibility.
- 8'. If it is possible that it is not necessary that p , then it is not necessary that p . (S5: $\Diamond\neg\Box p \rightarrow \neg\Box p$)

Conclusion: $\neg\Box (PT \rightarrow Q)$ is true.

Thus, based on the anti-zombie argument and its “inverted” counterpart, we can conclude that $\Box (PT \rightarrow Q)$ is both true and false.

In sum, by assuming that the following premises, both of which involve

¹²⁶ See Yablo (2000), p. 101.

¹²⁷ See Frankish (2007), Brown (2010).

respectively a modal claim, are true:

3. It is ideally conceivable that it is necessary that an omniscient, omnipotent, and morally perfect being exists.
6. It is ideally conceivable that it is necessary that $P \rightarrow Q$.

and by assuming CP and S5, we can conclude from Premise 3 and 6 respectively:

- (C_a) It is necessary that an omniscient, omnipotent, and morally perfect being exists.
- (C_b) $\Box (PT \rightarrow Q)$ is true.

Moreover, by “inverting” Premise 3 and 6, we can formulate the following two premises:

- 3'. It is conceivable that it is not necessary that an omniscient, omnipotent, and morally perfect being exists.
- 6'. It is conceivable that it is not necessary that $P \rightarrow Q$.

Next, by constructing two “inverted” meta-modal conceivability arguments, we can conclude respectively:

- (C_a') It is not necessary that an omniscient, omnipotent, and morally perfect being exists.
- (C_b') $\neg \Box (PT \rightarrow Q)$ is true.

To sum things up, CP can lead to a pair of contrary conclusions. Opponents of the CP thesis, such as Yablo, hold that it is the failure of the CP thesis that leads to the contrary conclusions. To avoid such an objection, Chalmers responds that the problem arises due to the double modality and proposes to exclude all modal claims from the scope of the CP thesis. Both sides regard S5 as problem-free. In the remainder of this chapter, I will put issues on S5 aside, assuming that it is the correct logic for this discussion. I will respond to both Yablo and Chalmers, and argue that both fail to see the real problem of meta-modal conceivability arguments.

2. An Objection to Yablo

From the fact that the CP thesis leads to a pair of contrary conclusions, what we

can conclude is a conditional: For some proposition $\Box q$, if both $\Box q$ and $\neg\Box q$ are ideally conceivable, then CP fails. In other words, the conclusion we can draw is that the CP thesis is not compatible with the assumption that both $\Box q$ and $\neg\Box q$ are ideally conceivable. Hence, we can infer that CP fails if we can provide a good reason to accept that there are some $\Box q$ such that $\Box q$ and $\neg\Box q$ are indeed ideally conceivable. Otherwise, whether or not CP fails is an open question. However, it is far from clear that Yablo provides such a reason. In his paper *Textbook Kripkeanism and the Open Texture of Concepts*, he says:

God in other words is either necessary or impossible. But, God is not impossible, since we can easily conceive him. Hence God is necessary, and so actual... Another thing that seems clearly conceivable is that there should fail to be a being whose essence includes existence; it seems conceivable, in fact, that there shouldn't be anything whatsoever. Now we have talked ourselves into a contradiction. Textbook Kripkeanism has the result that (Hartshorne's) God exists in some worlds but not in others. But it is a conceptual truth about this God that he exists in every world or none.¹²⁸

In this passage, it is not clear in which sense Yablo takes God's existence and non-existence as conceivable. One possibility is that the conceivability he intends is ideal conceivability. If this is the case, it seems Yablo just *claims* that God's existence and non-existence are both ideally conceivable without providing any evidence. In this case, his argument against CP is not complete. He should provide a justification for the claim that both God's existence and non-existence are ideally conceivable.

Another possibility is that the kind of conceivability involved in his argument stands for *prima facie* conceivability. Judging by his use of "we can easily conceive" and "seems clearly conceivable", it seems that *prima facie* conceivability is the kind that Yablo has in mind. But if this is the case, it is possible that Yablo simply confuses *prima facie* conceivability and ideal conceivability, or that he presupposes either of the following two hypotheses:

(H₁) For any proposition $\Box q$, *prima facie* conceivability entails possibility.

¹²⁸ Yablo (2000), pp. 100-101.

(H₂) For any proposition $\Box q$, *prima facie* conceivability entails ideal conceivability.

However, both H₁ and H₂ are false. In Chapter 2, I have addressed that in the non-modal realm, *prima facie* conceivability does not entail possibility. A proposition is *prima facie* conceivable if we cannot rule it out a priori or if we can find a seemingly consistent set of propositions that entails p .¹²⁹ However, due to the limitations of our cognitive capabilities, p may involve a contradiction that we cannot detect. In this case, p is not possibly true. So *prima facie* conceivability does not entail possibility. Moreover, since ideal conceivability entails possibility, *prima facie* conceivability cannot be considered a guide to ideal conceivability in the non-modal realm.

In the modal realm, *prima facie* conceivability cannot be considered a guide to possibility or ideal conceivability, either. We cannot a priori rule out either $\Box GC$ or $\neg\Box GC$. That is to say, both of them are *prima facie* conceivable. However, $\Box GC$ is either necessarily true or necessarily false in S5. In other words, it cannot be the case that both $\Box GC$ and $\neg\Box GC$ are possibly true. Hence, *prima facie* conceivability does not entail possibility in the modal realm. Moreover, $\Box GC$, whose truth-value is a priori knowable, is either a priori true or a priori false. Hence, between $\Box GC$ and $\neg\Box GC$, one is not ideally conceivable. Since both $\Box GC$ and $\neg\Box GC$ are *prima facie* conceivable but one is not ideally conceivable, *prima facie* conceivability does not entail ideal conceivability in the modal realm.

To sum things up, if Yablo intends to speak of ideal conceivability, then he does not provide a reason for the claim that both God's existence and non-existence are ideally conceivable; if he intends to speak of *prima facie* conceivability, then his argument fails, since *prima facie* conceivability is not a reliable guide to possibility or ideal conceivability. Thus, Yablo's argument against CP is not as convincing as he claims. Whether or not CP fails is yet to be determined.

3. An Objection to Chalmers

To avoid Yablo's objection, Chalmers proposes to exclude all necessity claims from the scope of CP. However, as I have argued in the last section, Yablo's

¹²⁹ Note the difference between *prima facie* conceivability and ideal conceivability. A proposition being ideally conceivable requires that it be contradiction-free, but there is no such requirement in the notion of *prima facie* conceivability.

argument is not very convincing. So why do we have to reduce the domain of CP to avoid his attack? And yet, Chalmers insists on doing so due to another concern. The reason, according to him, is that it is very difficult to conceive of what a necessity proposition says. Refuting Yablo's idea that a necessary God is ideally conceivable, Chalmers says: "A god's existence may be conceivable, but to conceive of a god's necessary existence is much harder, especially given its conceivable nonexistence."¹³⁰ His idea can be stretched using the metaphor by Mizrahi and Morrow.¹³¹ According to them, our capability to conceive of something works like a telescope that allows us to peer into *some* possible worlds, but we cannot "zoom out" to see *all* possible worlds. This explains why it is hard or even impossible for us to conceive of what a proposition $\Box q$ says. Thus, in Chalmers' view, the following premise is true:

(P₁) For any proposition $\Box q$, it is hard to conceive of what it says.

Elsewhere, Chalmers is quite explicit that if what a proposition says is hard to conceive of, then this proposition cannot be used in the conceivability premise of a conceivability argument. Refuting Sturgeon, who holds that phenomenal consciousness being a physical process is ideally conceivable (i.e., that $\Box (PT \rightarrow Q)$ is ideally conceivable), Chalmers says:

Many people have noted that it is very hard to imagine that consciousness is a physical process. I do not think this unimaginability is so obvious that it should be used as a premise in an argument against materialism, but likewise, the imaginability claim cannot be used as a premise, either.¹³²

In this passage, it seems that Chalmers assumes the following principle:

(P₂) For any proposition p , non-modal or modal, if it is hard to conceive of what p says, then "it is ideally conceivable that p " cannot be used as a premise in a conceivability argument.

According to (P₁) and (P₂), Chalmers draws the conclusion that all necessity propositions have to be excluded from the scope of the CP thesis. In the following, I will respond to Chalmers by arguing for the following three theses:

¹³⁰ Chalmers (2002), p. 189.

¹³¹ Mizrahi & Morrow (2015), p. 8.

¹³² For Sturgeon's argument, see Sturgeon (2000), pp.114-116. For Chalmers' attack, see Chalmers (2010), p. 180.

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- (T₁) For some proposition $\Box q$, it is not hard to conceive of what it says.
- (T₂) The difficulty to conceive of what a proposition p says is irrelevant to p 's ideal conceivability or our knowledge (or evidence) of p 's ideal conceivability. Thus, even if it is difficult to conceive of the contents of some modal claims, it is not necessary to exclude these modal claims from the scope of the CP thesis.
- (T₃) Even if we exclude all necessity claims from the scope of the CP thesis, the apparent problem with regard to all meta-modal conceivability arguments nevertheless arises with regard to some non-metamodal conceivability arguments. Thus, it is not sufficient to avoid the apparent problem by reducing the domain of CP.

Let us consider (T₁) first. When it comes to the difficulty of conceiving of something, Chalmers must refer to *prima facie* conceivability rather than ideal conceivability. To say that a proposition p is ideally conceivable is to say that p is logically possible. Whether p is logically possible has nothing to do with our cognitive activities, such as conceiving, let alone the difficulties involved in these activities. So the notion of difficulty can only apply to *prima facie* conceivability.

Moreover, what Chalmers has in mind must be positive conceivability rather than negative conceivability. According to the definition of negative conceivability, if we cannot rule out p a priori, we can actually negatively conceive of what p says. In other words, to negatively conceive of what p says, we are merely required to not be able to do something, not, however, to be able to do something. It certainly is not a challenge not to be able to do something, so it is not difficult to negatively conceive of what p says.

Therefore, if there is any difficulty in conceiving of something, the difficulty can only arise when we *positively* conceive of it.¹³³ As has been said in Chapter 2, Chalmers draws an analogy between the activity of positive conceiving and imagination, and distinguishes two kinds of positive imagination: perceptual imagination and modal imagination. To perceptually conceive of what p says, we are required to form a mental image in which p is the case. Thus, in order to perceptually

¹³³ When the conceiving agent is non-ideal, such as ordinary people, the conceivability involved must be *prima facie* conceivability. So for the sake of brevity, I use “we positively conceive of something” instead of “we *prima facie* positively conceive of something”.

conceive of what $\Box q$ says, we have to form a mental image about all possible worlds. However, we are not able to do so because the number of all possible worlds is infinite. Thus, it is indeed difficult for us to perceptually conceive of what a proposition $\Box q$ says.

However, for some propositions $\Box q$, it is not difficult to modally conceive of what they say. By definition, for any p , to modally conceive of what p says, we just need to construct a set of propositions Γ such that we regard it as entailing p and such that we cannot find a contradiction in Γ . Any $\Box q$ is the logical consequence of $\Box \Box q$. Thus, to modally conceive of what $\Box q$ says, we only need to entertain the proposition $\Box \Box q$ if we cannot find a contradiction in $\Box \Box q$. Another way to modally conceive of what $\Box q$ says, due to Mizrahi & Morrow, is to invoke a Spinozistic deity, which is a being that makes “everything that happens in its world happen necessarily”.¹³⁴ If q is true, then a Spinozistic deity will make it necessarily true. In other words, if q is actually true, the proposition “a Spinozistic deity exists” entails that q is necessarily true. It follows that if q is a true proposition, we can modally conceive of what $\Box q$ says by appealing to the proposition “a Spinozistic deity exists”. Thus, there are at least two ways in which we can modally conceive of what some $\Box q$ say without any difficulty. Therefore, (P₁) is false and (T₁) is true.

Let us now consider (T₂). As far as I am concerned, there are only two reasons for us to refuse that a proposition p is used in a conceivability premise:

- (i) p is neither ideally negatively conceivable nor ideally positively conceivable.
- (ii) We have no knowledge or evidence for whether p is ideally conceivable.

If (i) holds, a conceivability argument which resorts to the ideal conceivability of p is unsound; if (ii) holds, we have no knowledge or evidence for whether a conceivability argument is sound. In either case, a conceivability argument cannot provide a guide to what is possible.

However, the mere fact that what a proposition says is hard to conceive does not entail that this proposition is not ideally conceivable. It seems that Chalmers loses sight of the two definitions of ideal conceivability that he provides, INC and IPC. Both of them are defined in terms of apriority and coherence, and thus are grounded

¹³⁴ Mizrahi & Morrow (2015), p. 7.

in rational, rather than psychological notions. In this sense, ideal conceivability is not agent-relative. Therefore, it is independent from our cognitive capabilities. Whether it is ideally conceivable that p has nothing to do with the trouble we may have in conceiving of what p says, just like whether a flower is red does not depend on whether we are able to see it. As an a priori knowable proposition, $\Box GC$ is ideally conceivable if it is true, although it may be hard for someone who lacks knowledge in logic to entertain a proposition that entails $\Box GC$ (For example, someone who does not know that $\Box \Box GC$ entails $\Box GC$ may not be able to modally conceive that $\Box GC$ is true).¹³⁵

That what a proposition says is hard to conceive of does not entail that we have no knowledge or evidence of its ideal conceivability, either. If we know that $\Box GC$ is true, we can know that $\Box GC$ is ideally conceivable. In this case, the difficulty in conceiving that $\Box GC$ is true is irrelevant to our knowledge or evidence of the ideal conceivability of $\Box GC$. Since the difficulty in conceiving of what $\Box q$ says has nothing to do with the ideal conceivability of $\Box q$ or our knowledge of the ideal conceivability of $\Box q$, it is not necessary to exclude all $\Box q$ from the scope of the CP thesis.

Lastly, let us consider (T₃). I have argued in the preceding chapter that we can formulate a pair of parallel conceivability arguments that have contrary conclusions even within the domain of non-modal propositions. One example for this is Descartes' argument for dualism and its "inverted" argument.

Descartes' Argument:

- It is ideally conceivable that my mind \neq my body.
- Ideal conceivability entails possibility.
- If it is possible that my mind \neq my body, then my mind \neq my body.

Conclusion: My mind \neq my body.

The "Inverted" Argument of Descartes' Argument:

- It is ideally conceivable that my mind = my body.
- Ideal conceivability entails possibility.
- If it is possible that my mind = my body, then my mind = my body.

Conclusion: My mind = my body.

¹³⁵ Frankish holds the same view. He writes: "Conceivability is all or nothing, and one state of affairs may be harder to imagine than another without being less conceivable." Frankish (2007), p. 660.

Another example is Kripke's argument against type physicalism and its "inverted" argument.

Kripke's Argument:

- It is ideally conceivable that $\text{pain} \neq \text{C-fiber firing}$.
- Ideal conceivability entails possibility.
- If it is possible that $\text{pain} \neq \text{C-fiber firing}$, then $\text{pain} \neq \text{C-fiber firing}$.

Conclusion: $\text{Pain} \neq \text{C-fiber firing}$.

The "Inverted" Argument of Kripke's Argument

- It is ideally conceivable that $\text{pain} = \text{C-fiber firing}$.
- Ideal conceivability entails possibility.
- If it is possible that $\text{pain} = \text{C-fiber firing}$, then $\text{pain} = \text{C-fiber firing}$.

Conclusion: $\text{Pain} = \text{C-fiber firing}$.

Thus, even if we confine the domain to non-modal claims, the apparent problem that a pair of contrary conclusions can be inferred from CP does not disappear. So confining the domain is not sufficient to avoid the problem if there is one.

4. A Dilemma

In Section 2, I have argued that Yablo is too quick in drawing the conclusion that CP is false. In Section 3, I have argued that in order to avoid Yablo's objection, it is neither necessary nor sufficient to confine the scope of CP to non-modal claims. In this section, I will present a problem with meta-modal conceivability arguments that Yablo and Chalmers fail to see. I will present this problem in the form of a dilemma.

In Chapter 5, I have argued that a dilemma arises when the CP thesis is applied in a priori realm. If the truth-value of p is a priori knowable, then between p and $\neg p$, only one is ideally conceivable. To tell the conceivable one from the inconceivable one, an independent argument is required. However, if this independent argument provides a reason for accepting that p is ideally conceivable, it follows that p is proven to be true; if the independent argument provides a reason for accepting that $\neg p$ is ideally conceivable, it follows that $\neg p$ is proven to be true. Thus, if the truth-value of p is a priori knowable, to know or have evidence for whether p is ideally conceivable, we are required to provide an argument by which we can determine the truth-value of p . Thus, we are confronted with a dilemma: If we can provide such an

independent argument, we can know the truth-value of p without resorting to a conceivability argument. In this case, a conceivability argument is redundant. If we cannot provide such an independent argument, then we cannot know or have evidence for whether p is ideally conceivable. In this case, we cannot know or have evidence for whether a conceivability argument is sound.

Moreover, as has been argued in Chapter 2, if p is a proposition such that if it is possibly true, then it is true; and if it is possibly false, then it is false, then p 's truth-value is a priori knowable if CP is true. In S5, the following holds for any proposition $\Box q$: If $\Box q$ is possibly true, it is true; if $\Box q$ is possibly false, it is false. Thus, in S5, the truth-value of any $\Box q$ is a priori knowable if CP holds. It follows that between a meta-modal conceivability argument and its "inverted" counterpart, only one is sound, but the other is not. We have to invoke an independent argument to determine which one is sound. However, if we can provide such an argument, then a meta-modal conceivability argument is not needed anymore. If we cannot do this, then we cannot know or have evidence for whether a meta-modal conceivability argument is sound. In conclusion, if CP holds, it is shown to be of little use in the modal domain.

Chapter 7: Can Moderate Modal Skepticism Be Eliminated?

In Chapter 4, I have argued that we cannot refute the CP thesis by appealing to *reductio* arguments. In Chapter 5, I have argued that we cannot determine whether or not physicalism is true by resorting to conceivability arguments. In Chapter 6, I have argued that if p is a modal claim which can be written as $\Box q$, then we cannot know or have evidence for whether p is possibly true. All of my arguments show that there are some propositions the possibility of which cannot be justified or known via conceivability, which leads to the view of van Inwagen's modal skepticism. In this chapter, I discuss van Inwagen's modal skepticism and provide a defense for this view.

1. Moderate Modal Skepticism

According to the extreme version of modal skepticism, if a claim is false, then we cannot know or be justified in believing that it is possibly true.¹³⁶ However, this view is counter-intuitive. For example, even if Lily wore a green dress today, we would nevertheless know that she *could have worn* a dress that has a different color. In this chapter, I will focus my discussion on the less extreme version of modal skepticism, i.e., moderate modal skepticism. According to this view, if a claim is a so-called *extraordinary* claim, then we cannot know or be justified in believing that it is possibly true.¹³⁷

I trace moderate modal skepticism back to van Inwagen. In his paper *Modal Epistemology*, van Inwagen separates possibility claims into two groups. One group consists of claims that are not far removed from our daily life, such as “it is possible that the table that was in a certain position at noon [has] then been two feet to the left of where it in fact was.”¹³⁸ Claims contained in this group are called *ordinary* claims. The other group comprises “philosophically interesting modal judgments about concerns remote from everyday life”, such as “it is possible that I exist and nothing material exist[s].”¹³⁹ Claims contained in this latter group are called *extraordinary* claims. Van Inwagen argues that we can only have knowledge or evidence of ordinary

¹³⁶ M. Strohming & J. Yli-Vakkuri (forthcoming).

¹³⁷ The words “statements”, “claims”, “judgments”, and so on will be used interchangeably throughout this section.

¹³⁸ van Inwagen (1998), p. 70.

¹³⁹ van Inwagen (1998), p. 67.

claims but cannot have knowledge or evidence of extraordinary claims by any means. I call this view MS:

(MS) If $\Diamond p$ is an extraordinary claim, then it cannot be known or justified by any means.

In particular, he argues that if $\Diamond p$ is an extraordinary claim, then it cannot be known or justified via Yablo-style conceivability. I call this view MSY:¹⁴⁰

(MSY) If $\Diamond p$ is an extraordinary claim, then it cannot be justified *via* Yablo-style conceivability.

MS is a highly contentious claim. Van Inwagen first examines a few methods by means of which we can acquire modal knowledge, and then argues that we cannot acquire knowledge or evidence of extraordinary claims via these means. For example, he argues that we can “validly deduce the conclusion that ‘It is possible for there to be orchids’ from the non-modal premise ‘There are orchids’”.¹⁴¹ Plus, he finds that we cannot acquire knowledge of extraordinary claims “by logical or mathematical deduction from basic modal knowledge and ‘facts about how the world is put together’”.¹⁴² He also argues that although we can acquire some modal knowledge via Yablo-style conceivability, we cannot acquire any knowledge or evidence of extraordinary claims in this way. However, many other modal epistemologies, such as similarity theory and counterfactual theory, have only been established or fully developed well after van Inwagen wrote his paper.¹⁴³ Thus, a worry about MS is that van Inwagen seems too quick in drawing his conclusion. By examining only two methods by which we acquire modal knowledge or justification, we cannot draw the conclusion that the knowledge or evidence of extraordinary claims cannot be acquired by any means.

One may, however, respond to this that in order to draw a general conclusion about all methods by means of which we can acquire modal knowledge or justification, van Inwagen does not have to examine all of them. After all, he gives an

¹⁴⁰ Note that unlike Chalmers, neither van Inwagen nor Yablo presupposes 2-D semantics. For them, only one proposition is associated with any statement. Thus, there seems no difference between “a proposition is justified” and “a statement is justified”. When I discuss van Inwagen or Yablo’s theory, I will use “statement” and “proposition” interchangeably. I will not do so, however, when I discuss Chalmers’ theory.

¹⁴¹ van Inwagen (1998), p. 74.

¹⁴² Ibid.

¹⁴³ For similarity theory, see Roca-Royes (forthcoming). For counterfactual theory, see Williamson (2005), (2007).

analogical argument for MS: Van Inwagen draws an analogy between our ability to acquire modal knowledge (or justification) and perception. He says that we can make judgments such as “that mountain is about thirty miles away” or “it’s about three hundred yards from that tall pine to the foot of the cliff” when we see things not far away from us.¹⁴⁴ Although not all of these judgments are infallible, we can be justified in believing them to a large extent. But when we try to estimate how far away the sun or the moon are, we cannot rely on our perception.

With respect to reliability, according to van Inwagen, our ability to acquire modal knowledge or justification is like our perception. Just like perception cannot provide a reliable justification for claims concerning physically distant objects, no modal epistemology can provide us with a justification for claims concerning modally distant things. Thus, van Inwagen concludes that there is no method by means of which we can acquire knowledge or evidence of claims “about concerns remote from everyday life”, that is, extraordinary claims.¹⁴⁵

This analogical argument is criticized by many philosophers. For example, as Hartl points out, “it is not clear why we should take for granted the analogy between physical distance and modal ‘distance’. Remoteness from the actual world cannot be ‘measured’ in the same way that we can measure physical distance.”¹⁴⁶ Secondly, even if the analogy holds, van Inwagen’s presupposition that we cannot know about distant objects by perception is vulnerable. For example, Geirsson argues that we cannot make visual judgments of distant things because we are average observers, who are not so able and reliable at observing objects at a distance. However, if we get visual training, we can see much further and can make better visual judgments than now. By the same token, according to him, if we know more about logic and more facts about the actual world, we can know extraordinary propositions by the same means by which we know ordinary propositions.¹⁴⁷ At any rate, in this chapter, I focus mainly on MSY, which seems a more plausible thesis than MS.

As to the argument for MSY, there are several weak points: Firstly, van Inwagen imposes a high standard on conceivability-based justification, which leads to a result that is inconsistent with MSY. Secondly, he merely provides some claims as examples of extraordinary claims, but he does not provide a clear definition of

¹⁴⁴ van Inwagen (1998), p. 70.

¹⁴⁵ van Inwagen (1998), p. 67.

¹⁴⁶ Hartl (2016), p. 275.

¹⁴⁷ Geirsson (2005), p. 282.

extraordinary claims. Without a clear definition, however, it is difficult to determine whether a given claim is an extraordinary or an ordinary one. Thirdly, van Inwagen just discusses modal skepticism within the framework of Yablo's theory, which is not the most refined theory of conceivability. Hence, it is to be determined whether moderate modal skepticism is still true within the framework of a better theory of conceivability.

As to the first problem, Hawke suggests a solution, which I adopt in this chapter. Moreover, I go one step further by providing a definition for the notion of extraordinary claims such that MSY is rendered true and van Inwagen's argument for MSY holds. Finally, I show that moderate modal skepticism cannot be eliminated even within the framework of Chalmers' theory of conceivability.

2. Modal Skepticism Within Yablo's Framework

2.1 An Example

Before discussing van Inwagen's argument for MSY, let us consider one of the examples of extraordinary claims that he gives: the statement "it is possible that I exist and nothing material exist[s]." He argues that an extraordinary claim can be used as a "crucial" premise of a "possibility argument".¹⁴⁸ For example, the statement "it is possible that I exist and nothing material exist[s]" can be used as a crucial premise in the argument for Cartesian dualism, which goes as follows:

- It is possible that I exist and nothing material exist[s].
- Whatever is material is essentially material.

Conclusion: I am not a material thing.¹⁴⁹

Moreover, van Inwagen argues that "possibility arguments can often be 'inverted' to produce an argument for the denial of the conclusion of the original argument."¹⁵⁰ The "inverted" counterpart of the argument above goes as follows:

- It is possible that I exist and nothing immaterial exist[s].
- Whatever is immaterial is essentially immaterial.

Conclusion: I am not an immaterial thing.¹⁵¹

¹⁴⁸ See van Inwagen (1998), p. 68.

¹⁴⁹ Ibid.

¹⁵⁰ Ibid.

Obviously, it cannot be the case that both a possibility argument that has an extraordinary claim as its crucial premise and its “inverted” counterpart are sound. Moreover, the following premise also seems plausible:

For any proposition p , it cannot be the case that one is both justified in believing p and justified in believing $\neg p$.

It follows that we cannot both be justified in believing that I am not a material being and justified in believing that I am not an immaterial being. It follows further that we cannot both be justified in believing that it is possible that I exist and nothing material exists, and justified in believing that it is possible that I exist and nothing immaterial exists.

2.2 Yablo-Style Conceivability

In his paper *Is Conceivability a Guide to Possibility?*, Yablo provides a definition of conceivability (in what follows, I will call this kind of conceivability “Yablo-style conceivability”):

(YC) For any p , p is conceivable for an agent A iff A can conceive of a world that A takes to verify p .¹⁵²

Moreover, Yablo is a proponent of the evidential account, according to which conceivability provides evidence of possibility. Thus, based on the definition of Yablo-style conceivability, he holds the following view:

(YCP) For any p , if an agent A can conceive of a world that A takes to verify p , then A is justified in believing that p is possible.

However, Yablo does not say much on what verification means. Thus, a natural question poses itself: How does an agent A know that the relevant depth of the scenario he conceives of is sufficient to form the basis of the truth of a given claim p ? This is the so-called “relevant-depth problem”.¹⁵³ For example, when one conceives of a scenario in which mathematicians claim that the Goldbach Conjecture (GC) is

¹⁵¹ Ibid.

¹⁵² Yablo (1993), p. 29. It is worth noting that the term “world” cannot be read as a complete possible world, for nobody can conceive of such a world. Rather, it must be understood as a partial world or a scenario.

¹⁵³ See Vaidya, Anand, “The Epistemology of Modality”, The Stanford Encyclopedia of Philosophy (Summer 2017 Edition), Edward N. Zalta (ed.), forthcoming URL = <https://plato.stanford.edu/archives/sum2017/entries/modality-epistemology/>.

false, is this scenario in sufficient detail such that we can regard it as verifying \neg GC? To van Inwagen, the answer is definitely “no”. According to him, to conceive of a scenario that one takes to verify p requires that the scenario be incompatible with $\neg p$. In the case of GC, conceiving of a scenario in which mathematicians claim that GC is false is compatible with the fact that GC is true, since mathematicians may make mistakes.

However, in many cases, it is beyond our reach to conceive of a scenario in sufficient detail such that $\neg p$ is ruled out. Van Inwagen provides an example: He considers whether we can conceive of “worlds in which there are naturally purple cows, time machines, transparent iron, a moon made of green cheese, or pure phenomenal colors in addition to those we know.”¹⁵⁴ According to him, anyone who tries to conceive of such worlds will fail to do so. Or in other words, we seem to be able to conceive a world in which the things in question exist, but in fact we are not able to do so. Van Inwagen argues that, only if “our imaginings take place at a level of structural detail comparable to that of the imaginings of condensed-matter physicists who are trying to explain, say, the phenomenon of superconductivity”, can we say that we can conceive of that transparent iron exists.¹⁵⁵

According to him, what we can say at best is that we conceive of a world in which “the new Nobel laureate thanks those who supported him in his long and discouraging quest for transparent iron and displays to a cheering crowd something that looks (in our imaginations) like a chunk of glass.”¹⁵⁶ But this world is not a world in which transparent iron exists (nor a world in which transparent iron does not exist), because our imagination does not rule out the possibility that transparent iron does not exist. So by conceiving of such a world, we are not justified in believing that it is possible that transparent iron exists (nor justified in believing that it is possible that transparent iron does not exist). At best, what our imagination verifies is a disjunctive proposition that has the following propositions as some of its disjuncts:

- Transparent iron exists
- The scientific community has somehow been deceived into thinking that transparent iron exists

¹⁵⁴ van Inwagen (1998), p. 79.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

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- A crackpot physicist who thinks he has created transparent iron is the butt of a cruel and very elaborate practical joke
 - A group of fun-loving scientists have got together to enact a burlesque of a Nobel Awards Ceremony¹⁵⁷

Thus, via Yablo-style conceivability, at best we can be justified in believing that this disjunctive proposition is possibly true.

One may suggest that we can simply *stipulate* that we conceive of a world in which transparent iron exists. By doing so, we can trivially conceive of a world that verifies that transparent iron exists. However, as Hawke points out, “this kind of stipulation appears to miss the point of the verification so central to Yablo-conceivability”.¹⁵⁸ If to conceive of a world that verifies p meant to stipulate that p holds for this world, then we could conceive of anything as true in this sense, even if we know that p is necessarily false. For example, by stipulating that $2+2=5$ is true in a given world, according to this view, we can conceive of a world that verifies that $2+2=5$, and therefore, we are justified in believing that it is possible that $2+2=5$ via Yablo-style conceivability. However, we know that it is impossible that $2+2=5$. Thus, Yablo cannot accept this kind of stipulation.

2.3 Van Inwagen’s Argument for MSY

Van Inwagen argues that if $\Diamond p$ in question is an extraordinary claim, then no one can conceive of a scenario that is incompatible with $\neg p$. In this case, Yablo-style conceivability cannot provide a justification of $\Diamond p$. Van Inwagen’s argument can be reconstructed as follows:

1. For any claim p , one is justified in asserting the possibility of p only if one can conceive of a world that the conceiver takes to verify p .
2. For any claim p , one can conceive of a world that one takes to verify p only if one can conceive of a world in a sufficient amount of detail, relevant to p , so as to rule out the compatibility of the specified details of that world with $\neg p$.
3. If $\Diamond p$ is an extraordinary claim, then no one can conceive of a world in a sufficient amount of detail relevant to p .

¹⁵⁷ Ibid.

¹⁵⁸ Hawke (2011), p. 355.

Conclusion: If $\Diamond p$ is an extraordinary claim, then one is not justified in asserting the possibility of p .¹⁵⁹

As Hawke points out, this argument faces a potential objection that goes like this: Either Premise 2 is false, or it is true. If Premise 2 is false, then van Inwagen's modal skepticism collapses. If Premise 2 is true, then the possibilities of extraordinary claims cannot be justified via Yablo-style conceivability, nor can the possibilities of ordinary claims be justified this way. In other words, if Premise 2 is true, this will lead to a more radical version of modal skepticism that is inconsistent with van Inwagen's view.

Geirsson is a proponent of this objection. In his paper *Conceivability and Defeasible Modal Justification*, he provides the following example to illustrate his idea: We know that it is possible that the LPs do not work when we play them because we can conceive of a situation in which the LPs do not work when we play them. However, no one is able to imagine the "details of the technology that allows one to play LPs without background noise" because "the details are too many and require too much for anyone to entertain them".¹⁶⁰ Thus, if van Inwagen is right, then we have to accept the conclusion that we cannot be justified in believing that it is possible that the LPs do not work when we play them via Yablo-style conceivability.

It is not difficult to find additional examples. Hawke, for instance, provides his favorite mug-case as an example. We can conceive of the following scenario: Hawke prepares himself a cup of tea in his favorite tea mug. But what we conceive of is compatible with the case that the mug in our imagination is not his favorite mug but another one that has the same observable properties as Hawke's favorite mug.¹⁶¹ If we insist on the strict standard of conceivability that van Inwagen imposes, then we have to conclude that our belief that it is possible that Hawke prepares himself a cup of tea in his favorite tea mug cannot be justified via Yablo-style conceivability, which leads to a general skepticism about modal claims.

In view of these examples, Hartl suggests that van Inwagen's strict standard on conceivability is unrealistic and consequently denies that modal skepticism is true within Yablo's framework. He admits that in the case of GC, to provide evidence for the possibility of GC requires that we conceive of a scenario that entails GC (and

¹⁵⁹ I am using Hawke's reconstruction of van Inwagen's argument. See Hawke (2011), p. 352.

¹⁶⁰ Geirsson (2005), p. 287.

¹⁶¹ Hawke (2011), p. 355.

therefore, rules out \neg GC). However, he argues that this requirement is “only applicable to mathematical and logical propositions where the possibility of p logically implies the truth of p .”¹⁶² If p is not a mathematical or logical claim, according to Hartl, to conceive what p says does not require that $\neg p$ be ruled out. However, I do not think that Hartl is right on this point. The falsehood of his idea can be illustrated by means of the following example that he provides.

Hartl argues that the Greeks can conceive of a world that verifies that Hesperus is brighter than Phosphorus, even if their imagination does not rule out the possibility that Hesperus is not brighter than Phosphorus. So by appealing to YCP, he concludes that the Greeks are justified in believing that it is possible that Hesperus is brighter than Phosphorus.¹⁶³ In view of this example, I think that Hartl would accept the following line of reasoning: The Greeks can also conceive of a world in which Hesperus \neq Phosphorus, even if this imagination does not rule out the possibility that Hesperus = Phosphorus. Thus, according to YCP, Hartl would accept that the Greeks are justified in believing that it is possible that Hesperus \neq Phosphorus.

However, if to conceive of what p says does not require that $\neg p$ be ruled out, then the Greeks can also conceive of a world in which Hesperus = Phosphorus. By the same principle (YCP), Hartl has to accept the conclusion that the Greeks are justified in believing that it is possible that Hesperus = Phosphorus. Moreover, since that it is possible that Hesperus \neq Phosphorus entails that Hesperus \neq Phosphorus, and it is possible that Hesperus = Phosphorus entails that Hesperus = Phosphorus, Hartl has to accept the conclusion that via Yablo-style conceivability the Greeks are actually justified both in believing that Hesperus \neq Phosphorus and in believing that Hesperus = Phosphorus.¹⁶⁴

By the same token, I think Hartl would also accept the assumption that we can both conceive a world where I exist and nothing material exists *and* conceive a world where I exist and nothing immaterial exists. If I am right, then he would accept the conclusion that we are both justified in believing that I am a material thing *and* justified in believing that I am an immaterial thing. To sum things up, for some $\diamond p$ (including extraordinary claims, such as “it is possible that I exist and nothing

¹⁶² Hartl (2016), p. 279.

¹⁶³ Hartl (2016), p. 282.

¹⁶⁴ Let us assume that the Greeks know the following conditional: That it is possible that Hesperus \neq Phosphorus entails that Hesperus \neq Phosphorus, and that it is possible that Hesperus = Phosphorus entails that Hesperus = Phosphorus.

material exists”), if we give up the strict standard of modal justification, i.e., if to conceive of a world that verifies p does not require that $\neg p$ be ruled out, then we can be justified in believing both p and $\neg p$ via Yablo-style conceivability. However, this conclusion means that Yablo’s theory of conceivability does not hold, which is a consequence that Hartl himself is reluctant to accept. (Recall that Hartl argues that the strict standard of conceivability is “only applicable to mathematical and logical propositions where the possibility of p logically implies the truth of p .”¹⁶⁵ However, not only mathematical and logical claims are claims such that the possibility of p implies the truth of p , but also many non-logical and non-mathematical propositions have this feature, such as “Hesperus = Phosphorus”, “I exist and nothing material exists”, etc. Thus, it is untenable to propose that the strict standard of conceivability is only applicable to mathematical and logical claims.)

From these examples, we can see the difference between van Inwagen’s and Hartl’s view: According to van Inwagen, for *any* proposition $\Diamond p$, to conceive of what p says requires that $\neg p$ be ruled out. A consequence of this demanding standard of conceivability is that Yablo-style conceivability cannot provide justification for even non-extraordinary claims, which is inconsistent with van Inwagen’s own position. On the other hand, according to Hartl, for *any* proposition $\Diamond p$, to conceive of what p says does not require that $\neg p$ be ruled out if p is not a logical or mathematical claim. However, some p , although not logical or mathematical claims, are nevertheless claims such that their possibility implies their truth. In this case, Hartl has to conclude that both p and $\neg p$ can be justified via Yablo-style conceivability. This is a conclusion that even Hartl himself must be reluctant to accept.

Now we can consider the following question: Is there a way to modify van Inwagen’s argument such that the modified argument is sound? Hawke suggests a solution. According to him, “since the conclusion of van Inwagen’s argument is clearly directed at non-basic (i.e., extraordinary) modal claims”, we can “simply rephrase the entire argument in terms of extraordinary claims”.¹⁶⁶ In other words, according to Hawke, van Inwagen’s high standard of conceivability merely applies to extraordinary modal claims. That is to say, we only need to replace Premise 2 with 2’ but keep Premises 1 and 3. Thus, the modified argument runs as follows:

¹⁶⁵ Hartl (2016), p. 279.

¹⁶⁶ Hawke (2011), p. 362.

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1. For any claim p , one is justified in asserting the possibility of p only if one can conceive of a world that the conceiver takes to verify p .
 - 2'. If $\Diamond p$ is an extraordinary claim, one can conceive of a world that one takes to verify p only if one can conceive of a world in a sufficient amount of detail, relevant to p , so as to rule out the compatibility of the specified details of that world with $\neg p$.
 3. If $\Diamond p$ is an extraordinary claim, then no one can conceive of a world in a sufficient amount of detail relevant to p .

Conclusion: If $\Diamond p$ is an extraordinary claim, then one is not justified in asserting the possibility of p .¹⁶⁷

I think that Hawke's solution is reasonable. It enables van Inwagen's modal skepticism to be tenable within Yablo's framework of conceivability. Yet, there are some questions that Hawke does not answer: Which claims exactly are extraordinary claims? If $\Diamond p$ is an extraordinary claim, in virtue of what do we have to rule out the possibility of $\neg p$ when we conceive of a world that verifies p ? Another relevant question is this: Even if moderate modal skepticism holds within Yablo's system, can it hold in Chalmers' more refined theory of conceivability? In what follows, I will provide a characterization of extraordinary modal claims and discuss whether modal skepticism is true within Chalmers' framework of conceivability.

3. What Extraordinary Modal Claims Are

In this section, I consider the first question: What kind of propositions are extraordinary modal claims? Actually, we can get some hints from the example provided by van Inwagen. As has been said, "it is possible that I exist and nothing material exist" is an extraordinary claim. Moreover, I have argued that "it is possible that I exist and nothing material exist[s]" and "it is possible that I exist and nothing immaterial exist[s]" cannot both be justified, for otherwise we have to accept the conclusion that both "I am a material thing" and "I am an immaterial thing" are justified. This is because "I exist and nothing material exist[s]" is a claim such that its being possibly true entails that it is true and its being possibly false entails that it is false. Thus, why not simply define the notion of extraordinary claims in the following way?

¹⁶⁷ Hawke (2011), p. 363.

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- (EC) $\Diamond p$ is an extraordinary claim iff p is a claim such that if it is possible that p is true, then p is true; and if it is possible that p is false, then p is false.

According to this definition, it is not difficult to see why to conceive of a world that verifies p requires that $\neg p$ be ruled out if $\Diamond p$ is an extraordinary claim. If to conceive of a world that verifies p only requires that this world be *compatible* with p but not *entail* p (that is to say, this world is compatible with $\neg p$, too), then we can easily conceive of another world that verifies $\neg p$. Then, by YCP, we can draw the conclusion that both $\Diamond p$ and $\Diamond \neg p$ are justified via Yablo-style conceivability. Since $\Diamond p$ is an extraordinary claim, that is to say, p is a claim such that if it is possible that p is true, then p is true; and if it is possible that p is false, then p is false, we have to conclude that both p and $\neg p$ are justified. However, this conclusion is not acceptable. As a result, if $\Diamond p$ is an extraordinary claim, the world that we conceive of and that we regard as verifying p has to be incompatible with $\neg p$.

According to EC, it can be seen that the following groups of claims are all extraordinary claims:

- (1) Claims about necessities. For example:
 - It is possible that it is necessary that an omniscient, omnipotent, and morally perfect being exists.
 - It is possible that $\Box (PT \rightarrow Q)$ is true (P , T and Q respectively stand for a conjunction of all the microphysical truths of the actual world, a “that is all” clause and an arbitrary phenomenal truth of the actual world.)
- (2) Claims about identity (or non-identity). For example:
 - It is possible that pain \neq C-fiber firing.
 - It is possible that water \neq H₂O.
 - It is possible that Hesperus \neq Phosphorus.
- (3) Mathematical and logical claims. For example:
 - It is possible that GC is true.
 - It is possible that “‘7777’ occurs in the decimal expansion of π ”.¹⁶⁸

4. Can Modal Skepticism Be Eliminated via Chalmers-Style Conceivability?

¹⁶⁸ This example is due to van Inwagen (1977), p. 385.

Given the definition of extraordinary claims, MSY can be read in the following way:

If $\Diamond p$ is a claim such that if it is possible that p is true, then p is true, and if it is possible that p is false, then p is false, then $\Diamond p$ cannot be justified via Yablo-style conceivability.

In what follows, I will consider whether modal skepticism is true within Chalmers' framework of conceivability. In other words, I will consider whether the following view, which I call MSC, is true.

(MSC) If $\Diamond p$ is an extraordinary claim, then it cannot be known or justified via Chalmers-style conceivability.

In order to do so, it is necessary to address the differences between Yablo's and Chalmers' theories of conceivability and possibility. Firstly, Chalmers' theory presupposes 2-D semantics but Yablo's theory does not. As has been said in Chapter 2, according to Chalmers, any statement is associated with two intensions, that is, two propositions. By distinguishing the two intensions, what we are concerned with is whether what a statement's primary or secondary intension says is conceivable. Moreover, as Chalmers points out, the conceivability of a statement's secondary intension is not always acquired a priori. This is why the conceivability of a statement's primary intension is of central concern.

Due to this difference, some extraordinary claims for Yablo turn out to be non-extraordinary claims in Chalmers' theory. Take the claim "it is possible that $\text{water} \neq \text{H}_2\text{O}$ " as an example. According to the definition of an extraordinary claim that I provide, this claim is an extraordinary claim in Yablo's framework, for if it is possible that $\text{water} \neq \text{H}_2\text{O}$, then $\text{water} \neq \text{H}_2\text{O}$; and if it is possible that $\text{water} = \text{H}_2\text{O}$, then $\text{water} = \text{H}_2\text{O}$. Unlike Yablo, Chalmers would focus his discussion on the proposition "it is possible that watery stuff is not H_2O ", which is the primary intension of the statement "it is possible that $\text{water} \neq \text{H}_2\text{O}$ ". The proposition "it is possible that watery stuff is not H_2O " is not an extraordinary claim. By the same token, the claim "it is possible that $\text{Hesperus} \neq \text{Phosphorus}$ " is an extraordinary claim in Yablo's framework, but the proposition "it is possible that the brightest star in the evening is not the brightest star in the morning" is not an extraordinary proposition in Chalmers' framework. The claim "it is possible that $\text{pain} \neq \text{C-fiber firing}$ ", on the

other hand, is a different case. It has the same primary and secondary intension. Since the possibility of the claim “pain \neq C-fiber firing” entails its truth, and the possibility of its falsity entails its falsity, the claim “it is possible that pain \neq C-fiber firing” is an extraordinary claim both in Yablo’s and Chalmers’ theories.

In sum, if a statement is an extraordinary claim, and if its primary and secondary intension do not coincide, then its primary intension is not an extraordinary proposition. If a statement is an extraordinary claim, and if its primary and secondary intension are the same, then its primary intension is an extraordinary proposition.

The second difference between Yablo’s theory and Chalmers’ theory is that the latter appeals to ideal conceivability (i.e., logical possibility), but the former does not. Thus, for Yablo, whether or not we can be justified in believing that p is possibly true depends on whether or not we can conceive of a world that verifies p . By contrast, for Chalmers, whether p is possibly true depends on whether p is ideally conceivable, i.e., logically possible — which has nothing to do with our capability of conceiving. Whether we can know or have evidence for p ’s possibility does not depend on our capability of conceiving, either, but instead depends on our judgment of p ’s ideal conceivability (i.e., logical possibility).

Now let us consider this question: If $\Diamond p$ is an extraordinary claim, can it be known or justified by means of Chalmers-style conceivability? To answer this question, we first have to consider the following question: If $\Diamond p$ is an extraordinary claim, can we know or have evidence for whether p is ideally conceivable? If $\Diamond p$ is an extraordinary claim, this means that p is such a proposition that if it is possibly true, then it is true, and if it is possibly false, then it is false (in other words, $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$ holds). At the end of Chapter 2, I have argued that in Chalmers’ theory, if p is a proposition for which $(\Diamond p \rightarrow p) \wedge (\Diamond \neg p \rightarrow \neg p)$ holds, then the truth-value of p is a priori knowable, i.e., p is either priori true or a priori false. Moreover, if the truth-value of p is a priori knowable, then p is ideally conceivable (i.e., logically possible) iff p is true. In order to know or have evidence for whether p is ideally conceivable, we have to provide an independent argument. If this argument demonstrates that p is ideally conceivable, it follows that p is proven to be true; if this argument demonstrates that p is ideally inconceivable, then p is proven to be false. In other words, to tell whether p is ideally conceivable requires that we provide an independent argument by which the truth-value of p is determined. That is to say, we

cannot provide such an argument without knowing or having evidence of p 's truth-value. In this case, we cannot know or have evidence for whether p is ideally conceivable.

Here are some propositions that have been mentioned or discussed in previous chapters. We cannot know or have evidence for whether they are ideally conceivable without knowing or having evidence of their truth-values. In this case, we cannot know or have evidence for whether they are possible via Chalmers-style conceivability.

- It is necessary that an omniscient, omnipotent, and morally perfect being exists.
- $\Box (PT \rightarrow Q)$ is true.
- Pain \neq C-fiber firing.
- GC is true.
- “7777” occurs in the decimal expansion of π .

Chapter 8: Conclusion

In this dissertation, I evaluated whether the CP thesis can qualify as an epistemic guide to possibility. I argued that in some cases, it cannot serve us as an epistemic guide to possibility. Generally, there are two lines of argument that opponents of the CP thesis can choose from: Either, they deny that the CP thesis is true. Or, for a proposition p which is involved in a conceivability premise, they deny that it is ideally conceivable that p . I have not adopted either strategy. Instead, I argued that even if CP is true and a given p is ideally conceivable, to know or have evidence for whether p is ideally conceivable is in some cases beyond our reach. Thus, in these cases, we cannot determine whether p is possible by appealing to the CP thesis. In Chapters 3-7, respectively, I argued in which cases we cannot know or have evidence for the ideal conceivability and possibility of p . In this final chapter, I will review the aspects of this dissertation that contributes to the discussion concerning conceivability and possibility.

In Chapter 3, I argued against Hanrahan and Bailey, who hold that for *any* proposition p , we cannot know or be justified in believing that it is ideally conceivable that p . I then evaluated Worley's argument, according to which there are some propositions p , for which we cannot know or be justified in believing that it is ideally conceivable that p . On the basis of Worley's view, I went one step further by specifying three cases in which the ideal conceivability of a given proposition cannot be known or justified. I applied these conclusions in the discussion of the following chapters.

In Chapter 4, I responded to a series of *reductio* arguments against the CP thesis. I found that none of their conceivability premises was fully justified. And I argued further that any attempt to provide a reason for accepting these conceivability premises would render the *reductio* arguments redundant. As a result, I demonstrated that there is a dilemma: Either we cannot vindicate the *reductio* arguments, or they are redundant. Thus, I concluded that it is hopeless to refute the CP thesis by appealing to conceivability arguments.

In Chapter 5, I discussed all conceivability arguments involved in the debate of physicalism vs. dualism. I argued that for each conceivability argument, we cannot know or have evidence for whether its conceivability premise is true. As a result, we

cannot determine whether physicalism is true by appealing to any conceivability argument.

In Chapter 6, I discussed a kind of conceivability argument, the so-called “meta-modal” conceivability argument. I argued that in order to determine whether such a meta-modal conceivability argument is sound, a new independent argument is required. However, this new argument will render the meta-modal argument redundant. Thus, there is a dilemma with meta-modal arguments: If we cannot provide such a new argument, then we cannot determine whether a meta-modal argument in question is sound. If we can provide such a new argument, then a meta-modal argument is redundant.

Finally, in Chapter 7, I defended van Inwagen’s moderate modal skepticism on the basis of Hawke’s defense. Van Inwagen argues that we cannot have evidence of the truth of extraordinary claims via Yablo-style conceivability. However, he does not provide a definition for the notion of “extraordinary claims”. Moreover, his argument may lead to a result that is inconsistent with his view. Hawke solves the latter problem, but the former remains. In the same chapter, I also specified which kinds of claims are extraordinary claims. Moreover, I argued that moderate modal skepticism cannot be eliminated within the framework of Chalmers’ theory of conceivability and possibility.

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